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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Member

OCTOBER, 1940

Vol. 93, No. 10

Fighting a 15-Alarm Fire in the Yards of the Crown Cork and Seal Company, Baltimore, Md. The Loss Was Estimated at $500,000

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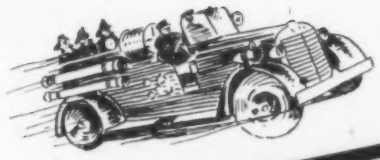

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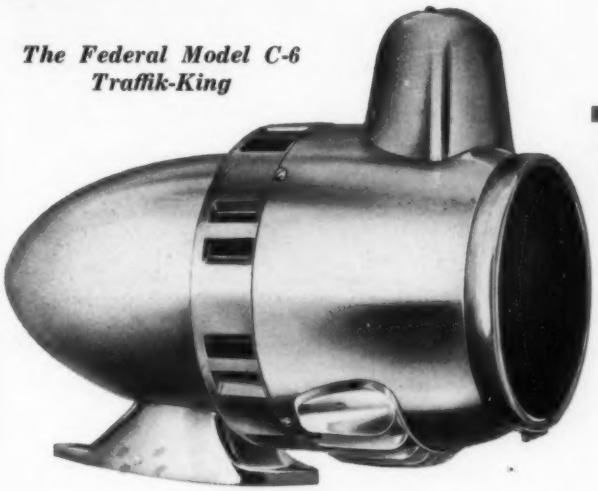

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FRED SHEPPERD
Editor
N. N. WOLPERT, Assistant Editor.

Time to Vote!

IN another two or three weeks, it will be time to exercise that good old American privilege — the right to vote.

● This year, we elect a President and representatives to our Congress. And, this year, as never before, we are faced with the task of deciding issues vital to our national and individual welfare. Let's keep an open mind and an open ear to both sides of these issues, and base our own conclusions on logic and fact.

● Whatever you do, don't fail to vote. Get your friends and associates to vote. It's a privilege which becomes every citizen's duty—especially in these days when countries the world over are clamping down on free expressions of opinion at the polls.

● "May the best man win."

The Publishers

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—MEMBER—
Audit Bureau of Circulation
Associated Business Papers

Published the tenth of each month by
CASE - SHEPPERD - MANN PUBLISHING CORPORATION
Also publishers of "Water Works Engineering" and "Sewage Works Engineering"
General Offices—24 West 40th Street, New York. U. S. A.

SUBSCRIPTION PRICE
U. S., $2 a year; Canada, $2.50; Foreign, $3; Single Copies, 25c

KARL M. MANN
President
J. HERBERT CASE
Vice-Pres. and General Manager

ALFRED J. HOUGHTON, Eastern Representative; H. S. ESSEX, Production Manager
CHICAGO: 6 N. Michigan Ave.—W. S. CLEVENGER, L. M. ROCHE: SAN FRANCISCO: 444 Market St.—CHARLES H. WOOLLEY, H. N. HARNER
Entered as second class matter April 15, 1929, at the Post office at New York, N. Y., under the Act of March 3, 1879.
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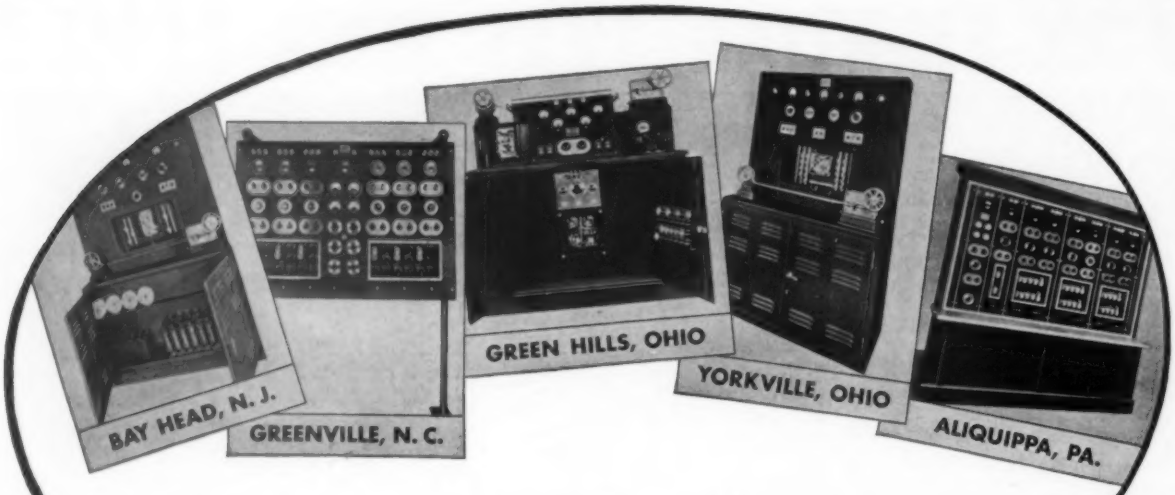

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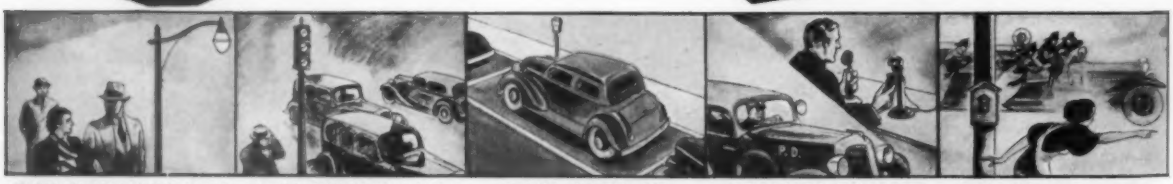

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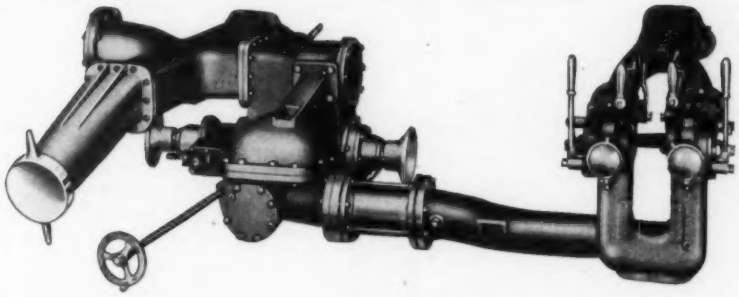

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The new "Three-Fold" fire alarm central station consists of control and operating equipment for 100 box circuits, 24 alarm circuits, and a "Vocalarm" voice communication system for 50 fire stations. More than 1200 boxes are now included in the system.

Defenses—National and Local

While the naval, military, and air defenses are essential to the security of the nation the security of the productive processes necessary to maintain the armed forces in the field is equally essential and the local defenses under control of the municipal governments should be made adequate. The Fire Service has come to be regarded as the first line of the civil defenses and on the municipal fire departments of the country devolves the onerous task of protecting the productive processes and human life against fire, too frequently caused by the enemy already within our borders—the saboteur.

A fire alarm signaling system with boxes adequately distributed, conspicuously located, and with circuits providing for a continuity of service even though accidentally or maliciously disrupted—and a police signaling system which provides for an adequate patrol of the Fire District—will immeasurably strengthen your community fire defenses and increase the efficiency of the Fire Service.

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FIRE ENGINEERING

OCTOBER, 1940 VOL. 93 NO. 10

A Lesson from Great Britain

Great Britain's Fire Service was prepared for war. During the past two years over five million feet of fire hose was purchased from manufacturers in the United States, in addition to that secured from her own plants working at top speed. Five thousand pieces of fire apparatus, including trailer pumps, had been purchased and placed in service during the same period. Fire Department personnel had been increased.

Although British cities had good fire departments originally—the per capita fire loss being but a fraction of that of cities of corresponding size here—the necessity for strengthening the service to meet war fire hazards was early recognized and action was promptly taken.

But despite the great reinforcement of the service with apparatus, equipment and personnel, fire losses from air attacks by the enemy have been appalling—far greater than generally believed by the American public.

What might have happened had not these precautionary measures been taken provides a subject for sober thought.

While American municipal officials in general seem not to have recognized the critical situation in which many fire departments find themselves today, Fire Chiefs are fully aware of the overwhelming problem of fire defense which faces them as war daily comes nearer our shores. At the Annual Conference of the International Association of Fire Chiefs, held at Spokane, Washington, in August, the following resolution was unanimously adopted:

WHEREAS: The Sixty-Eighth Annual Conference of the International Association of Fire Chiefs in assembly at Spokane, Washington, August 5th to 8th, 1940, realize the important role and grave responsibilities being placed upon the shoulders of the Fire Chiefs in doing their part under the national defense program and

WHEREAS: The strengthening of the line of defense against our common enemy, fire, which is a menace to our prosperity in time of peace and which would add immeasurably to the horrors of war should this country unfortunately become involved therein, is vitally important; and

WHEREAS: The many cases of sabotage, incendiarism and destruction of essential properties by fire is interfering with the progress of the national defense program; and

WHEREAS: It is a well known fact that practically all of the existing manpower, fire fighting equipment and signalling systems of the fire departments of the country are woefully inadequate; and

WHEREAS: It is essential in order that the fire departments be able to render full service that steps be taken to bring the manpower, fire fighting equipment and signalling systems up to full strength, and that they be modernized and extended to meet present day requirements or any emergency;

BE IT THEREFORE RESOLVED: That it is imperative for the protection of life and property as part of the national defense program that this organization go on record strongly urging the adoption of the necessary means to put into immediate effect the building up and extending of the manpower, fire fighting equipment and signalling systems of all fire departments.

Immediate action by municipalities in reinforcing their fire departments by the replacement of obsolete, and purchase of new, apparatus is imperative. Fire apparatus plants are already beginning to feel the effect of war orders for fire engines, and it may not be long until a big backlog of orders piles up. When that time arrives, cities will have to wait indefinitely for deliveries, for plant expansion and additions to plant personnel are next to impossible when machine tool makers and skilled mechanics are all engaged in manufacturing war munitions. Even today, skilled mechanics are unavailable.

Few today believe that this nation can escape being drawn into the war. Each day brings it nearer.

Our municipal officials should heed the advice of their Fire Chiefs or take a lesson from Great Britain and prepare their fire departments now for the huge task headed their way.

Fred Sheppard

The Work of the Fire Service During and Following Air Raids

By FRED SHEPPERD

IT is not within my province to predict whether or not war will reach our shores. However, the trend of the war in Europe during the past two months, the assertion by Hitler that the Monroe Doctrine is untenable, the unprecedented activity on the part of our government in appropriating vast sums for war materials and speedily inaugurating programs for the manufacture of weapons of war must indicate that war is not as far from our shores as we commonly hope. If war reaches this continent, we may expect it to come by way of the air; and if it does, the fire service will carry a tremendous responsibility in guarding against fire and in protecting the lives of citizens endangered by high explosive and incendiary bombs.

Firemen Wet Down Ruins of Buildings Destroyed by Fire From Incendiary Bombs in London. The Trailer Pump in the Foreground Boosts Pressure From Hydrant to Deliver an Efficient Stream (Cablephoto)

High Explosive Bombs

In this discussion of "The Work of the Fire Service During and Following Air Raids," it will be desirable to include data on high explosive bombs as well as incendiary bombs, for each creates work for the fire service. Furthermore, the two types are frequently used together, and oftimes produce disastrous results. Where high explosive bombs are employed, the department will be faced with the problem of rescuing trapped persons, demolishing structures which have been made dangerous by the bombs' damage, as well as fighting fires which may occur from bombing. Incidentally, high explosive bombs cause fires through demolition of buildings in which open flames are burning.

The greatest damage to buildings caused by high explosive bombs results not from the slivers of metal scattered when the bomb explodes, but rather from the blast, or high velocity gas, which is produced. At the temperature of explosion of material within the bomb, which may be from 5,000 to 7,000 degrees, Fahrenheit, the potential volume of gases is around 15,000 times that of the volume of the explosives employed. The pressure within the bomb, created by detonation (i.e. violent explosion) of the explosive, may be as much as a hundred tons per square inch.

The gases from a bomb, when detonation takes place, push away everything in the neighborhood, with an almost inconceivable force. The air is pushed forward at a speed of about 4,000 miles an hour, twenty times the speed of a fast airplane. A man standing within thirty feet of the larger bomb would be torn to pieces. When a bomb explodes, it creates a pressure wave in the atmosphere which travels at the high speed indicated previously. This pressure persists at any point for about one thousandth of a second. It is succeeded immediately afterward by a negative pressure, or suction, which appears to last a little longer. This is similar to the hollow behind of a big wave in water. These phenomena leads to odd results. Thus when a bomb had burst in a Spanish street in the recent war, the metal shutters of shops which had not been knocked down were sucked outward. And when a bomb fell within a house, a large part of the shattered walls fell inward.

Force of Bombs

The blast from a quarter ton bomb will knock down an ordinary house at twenty-five yards. A one-ton bomb will do the same at fifty yards. This is the case if it bursts on the ground. If it buries itself in soft ground, most of the blast goes upward. But a bomb falling in the middle of a street will probably knock over houses on both sides. One specific example of the destruction of high explosive bombs, reported from Great Britain, showed that a 1,000 kilogram (2,200 pounds) bomb demolished four houses, seriously damaged twenty others within a radius of 200 feet and partially damaged 119 other houses within a radius of 600 feet. The same authority states that a 5,000 pound bomb, which is now coming into use, will have a destruction zone of 3,000 feet in diameter. Of course, the concrete and steel buildings are far harder to destroy. Experience has shown that though such structures are not demolished, they are frequently warped upon being struck by a large bomb, and repair, if it is practical, is very costly.

With regard to the penetration of aerial bombs, assuming a maximum velocity of 1,200 feet per second, which would be the velocity if the bomb were dropped from around 20,000 feet altitude, a five hundred pound bomb would penetrate through a two foot thickness of concrete, or twenty feet of sand or gravel. A 2,000 pound bomb would probably penetrate the ground from fifty to sixty feet. It is assumed in both cases that the bomb does not explode before completing penetration. The width of the crater formed upon explosion would be from two to three times the penetration.

High explosive bombs are of two types, namely, the percussion type and the time fuse type. The first type explodes upon contact with any solid object. The second explodes at a predetermined time, the time being controlled by a time fuse. Hence a bomb can be dropped and not explode until after it has completed its penetration into a building or other object. Aerial bombs may strike at any one of four places; they may strike the street surface, the base of a wall, the wall, or on the roof.

Experiences in Spain

Ramon Perera, Chief Air Raid Protection Engineer to the government of Catalona during the recent Spanish War, in which mostly Italian and German bombs were employed, states* that from his observations he has determined that the dimensions of a crater produced from the explosion of an impact bomb of two hundred pounds weight in moderately soft ground are about three and a half feet in depth and about eight feet in diameter. In the case of a paved street, these dimensions are reduced to two feet nine inches and six feet. Generally speaking, the damages to services, such as water mains, electricity, gas pipes, telephone lines, etc., from bombs of 300 pounds or less weight are not very considerable.

Full scale tests of the effect of a 500 pound bomb on the service mains and sewers below the level of the street gave the following results:

1. All water mains were shattered.
2. Cast iron pipes were breached locally.
3. Joints in steel mains were damaged for considerable distances.
4. Sewers two bricks thick were cracked.

Thus, there is a real danger with a larger bomb, of serious damage to the water supply so widely needed in fire fighting operations. On the other hand, the cost of large bombs is so high, and the number carried by a plane so small, that it is commonly believed their use will be listed largely to military objectives.

Danger to Houses

Windows, doors and corrugated shutters are practically blown out of their housings, if they are within the near proximity of the explosion. A blast inside of a room affects the partitions, walls and furniture, and the intensity of these effects varies according to the distance; the structures of well built buildings are not seriously affected in the case of outside explosions. Aerial bombs are dropped from moving planes. They therefore have not only a vertical travel, but also a horizontal travel, due to the speed of the planes. For this reason such bombs frequently hit the side walls of buildings. With angles of impact of only fifteen degrees, that is the angle which the bomb makes with the vertical at the moment it reaches its target, the bomb may do very serious damage to the structure. It would be detonated, rather than deflected away from the structure.

An explosion of such a bomb can take place outside the wall, or inside of it. The first case occurs where the detonation of the fuse is produced by the shock against the building. The effect of the explosion usually produces a characteristic circular zone of damage. The propagation of the blast inside the house produces a general movement of partition walls, and all objects are swept against the side opposite to that at which the explosion took place. If the bomb can penetrate through the wall or pass through an opening, and the explosion take place inside, then the damage and general effects are totally different. The damage will be much greater. If the bombs should burst in the basement of the structure, then the greatest destructive effect is produced.

The procedure followed by Germany in bombing smaller communities, on its drive through Belgium and France, consisted of mass bombing, that is, the simultaneous dropping of a large number of bombs over the area of the town. Such a cumulative blast was usually sufficient to completely level most of the buildings of the town, provided they were of brick or frame construction. Frame buildings, surprising though it may seem, proved better able to resist the blast from a high explosive bomb than a brick building. In larger cities, the high explosive and incendiary bombs were used together in many cases.

The history of the Spanish War is remarkable in that the mortality from aerial bombs was comparatively low, totalling on an average of thirty-two deaths per ton of bombs dropped, according to Mr. Perera. This is probably accounted for by the fact that bomb shelters were provided in most of the large cities, and sirens were employed to warn the public to

Destruction Caused by High Explosive Bombs in a Town on England's Southeast Coast

*In Fire Protection and Air Raid Precautions Review.

take to the shelters whenever an air raid was imminent. Where high explosive bombs are employed, and explode on the street, they break windows of buildings over a large area. If incendiary bombs are employed during the same raid, the fire problem is increased severely due to the danger of spread of fire through open windows.

Gas Bombs

Gas protection has been so well developed that gas bombs are hardly a factor as far as the fire department is concerned. If incendiary bombs are employed, and fires result, any toxic or corrosive gases which may be discharged are reduced in effectiveness by the strong drafts created in the neighborhood of the burning building, which carry the gases upward. As a matter of fact, gas bombs were used very little in Spain, France or Belgium when high explosive bombs and incendiary bombs were being employed.

Incendiary Bombs

It is the incendiary bomb with which the fire department is most concerned. For it is this type of bomb, whose function it is to set fire to structures, and thereby create emergency work which falls solely within the scope of the fire service. Incendiary bombs may range in weight from half a pound to about 150 pounds. The two-pound bomb, of the smaller ones, is the one which is being most commonly used today. There seems to be some question as to the effectiveness of the smaller type of bomb. Because of the small quantity of combustible material carried, it must land adjacent to readily combustible materials in order to set fire. If it does not penetrate a fire resistant roof, no fire will result. On the other hand, if it is employed where wood shingle roofs are encountered, or where a thin composition roof is in use, then its effectiveness would be marked. The large types of bombs are highly effective. They have sufficient weight, and obtain sufficient velocity in falling, to penetrate almost any type of roof, with the result that they exert their fire starting ability within a structure.

The two most commonly used types of incendiary bombs today are the thermite bomb and the thermite bomb with "electron" jacket. Thermite is a mixture of aluminum and iron oxide (iron rust). The mixture is confined in a case of either zinc or iron, or of electron metal, which is an alloy of magnesium with small amounts of hardening and strengthening material such as aluminum, copper, silicon, etc., added. The advantage of the latter type of bomb is that the jacket will also burn, adding to the heat that was previously generated.

The thermite is ignited by means of a fuse set off by the impact of the bomb whereupon the thermite starts to burn. The chief product of the combustion is molten iron, and the heat generated is terriffic, reaching approximately 4,500 degrees Fahrenheit. A bomb of which the case is made of electron metal, may burn from ten to fifteen minutes. The thermite filling burns but one minute, however, and serves to ignite the magnesium case which continues the incendiary effect at a temperature of about 2,700 degrees Fahrenheit for approximately fifteen minutes. The intense heat created by the larger thermite bombs enables them to burn through several floors of a building before their combustible ingredients are finally consumed. Thus while a bomb may come to rest on one of the upper floors of a building, it may burn through to the floors below before it finally is exhausted.

Force of Thermite Bomb

In a demonstration, a two-pound thermite bomb was placed on a half-inch sheet of iron above a bucket of water and not only burned through the iron, but dropped into the bucket of water and burned through the bucket and the floor below. From this it is evident that water is not an effective extinguishing agent for thermite fires. As a matter of fact, water has a tendency to increase the intensity of a thermite fire. As thermite and iron oxide create the oxygen necessary to support combustion, smothering the fire is impossible.

The electron bomb has the added danger that in the early stages of combustion, minor explosions may occur at intervals, throwing pieces of white hot metal a distance of fifteen to twenty feet away from the burning mass, thus not only handicapping those attacking it but also spreading the area of the fire.

Water Speeds Up Fire

The ingredients of the thermite bomb produce free oxygen upon burning so fire therein cannot be smothered; application of water speeds up the intensity of the fire. The electron case, on the other hand, requires the oxygen in the air to maintain combustion. But if water is applied, the water is dissociated into free hydrogen and oxygen, and the oxygen intensifies the burning of the metal. Hence, while electron metal fires may be smothered if sufficient material of the right type is available, the application of water merely speeds up combustion. While it has been stated previously that water streams should not be directed on thermite bombs, because the water causes violent combustion and scattering of molten fragments, if streams are operated from a distance, they can be directed on thermite bombs and by the great quantity of water which is used, the fire in adjacent materials can be held and the thermite permitted to burn itself out. Close range operations of this type are inadvisable due to the danger to the men from flying particles of the molten metal.

Chemical Binder

As the iron oxide and the powdered aluminum in the thermite employed have a tendency to separate out if the bomb is moved about much, and thus lose their effectiveness, it is common practice to employ some form of binder to keep the materials in relative proportion throughout the bomb. One of the most effective agents for this purpose is a solidifying oil, which is fluid when heated, but solidates firmly when cooled. This heavy grease, or oil, upon ignition of the bomb, melts, and increases the intensity of the fire appreciably.

In addition to thermite bombs, phosphorous bombs and sodium bombs are also occasionally employed.

White phosphorous creates a much lower temperature than thermite when burning, and has not proven very successful as an incendiary agent in aerial bombs. Water can be applied to it when burning without danger. As a matter of fact, white phosphorous is stored under water, and when exposed to the air, it takes fire spontaneously. In contact with the human body, phosphorous produces burns which are slow and difficult to heal; thus the firing of phosphorous against personnel has a psychological value that greatly increases military effectiveness. It ignites only readily combustible materials, however, so that it is not considered fully satisfactory as an incendiary agent.

Sodium Ignites the Hydrogen

Sodium is a light, soft metal which on contact with water decomposes the water with vigorous evolution of hydrogen. The heat of the reaction

is sufficient to ignite the hydrogen and hence, in the presence of moisture, sodium is spontaneously inflammable. It was formerly used for filling some of the German incendiary shells, but apparently is little used today.

Many Fires Are Started

In using incendiary bombs for military operation, the success of the operation is dependent upon the number of fires which can be started at approximately the same time. If a plane carries 2,000 of the small bombs, and if only ten per cent of them are effective in starting fires, there will be two hundred fires created by the one plane. If a number of planes are involved in this operation, the size of the job facing the fire department can be appreciated.

Although anti-aircraft guns were effective during the last part of the Spanish War in keeping planes at a great height and warding off many attacks, the tactics employed by some airplanes engaged in incendiary work were as follows: The planes would travel at an elevation of about 25,000 feet until within a few miles of their objective. Then they would shut off the motors and coast toward the property to be attacked. In this manner, their presence was frequently not known until the bombs had been dropped. In fact the planes had opportunity to dump their load and be well on the way back before any of the bombs had reached their objectives.

With such a weapon as the incendiary bomb now commonly employed, the huge job facing the fire department in the event of an air attack cannot be minimized. Present facilities of no American fire department are either adequate or suitable for handling such a myriad of fires.

Firemen Can Save Nearby Homes

Extinguishing a fire involving thermite presents many difficulties. In the first place, the use of water streams on thermite not only increases the intensity of the fire, as previously noted, but also tends to cause explosion of the material, which spreads the fire and endangers the men operating on it. The fire cannot be smothered and therefore carbon tetrachloride and carbon dioxide are of little use. Furthermore, the use of carbon tetrachloride extinguishers on such fires is not recommended from the safety angle. As the thermite fire cannot be extinguished, about all the fire department can do is to prevent the fire from involving adjacent combustible materials. Powdered talc and dry sand are effective in slowing down the combustion of the thermite bomb, though they will not extinguish the fire. On the other hand, fog nozzles have been used with good effect. The fine fog, or mist, discharged on the thermite speeds up its burning, as indicated above, but it does not cause the explosion produced by a solid stream of water on the thermite. Furthermore, the fog wets down the combustible material around the thermite bomb, and permits the bomb to burn itself out without spreading the fire. Of course, if the thermite bomb burns through the floor, it must be followed up after any fire it may have caused in the first location has been extinguished.

Liquid Phosphorus Used

In addition to the incendiary materials mentioned before, there is still a third which is used to some extent. This is in the form of a liquid, and usually contains phosphorus dissolved in carbon bisulphide and zinc ethyl. While fires originating from the use of such liquids are comparatively easy to handle, danger to personnel is serious, for the inflammable material cannot be readily extinguished, and upon coming in contact with the garments may burn through to the skin, causing serious burns.

Another type of incendiary bomb which has been used to a limited extent is the "scatter type" bomb. This consists of a shell enclosing a number of small incendiary agents which are scattered by the explosion of the bomb. This type of bomb is quite effective for firing grain fields, woods and other quickly ignitable substances. Black powder is commonly used to scatter the impregnated balls of combustible materials contained in the bomb.

(*To be continued*)

Acknowledgement. Paper presented before the 67th Annual Conference, International Association of Fire Chiefs, Spokane, Wash., August 5 to 8.

Fire Protection Warning

Just before a recent meeting called by Chief Forest Laufraw, of the Goshen, Ind., Fire Department at which Fire Prevention Plans were discussed, the following notice appeared on the department's billboard:

Firemen

"Fire Departments everywhere have had and still do have an important job of furnishing protection in their respective communities against fire destruction.

"The fire demon is our enemy and it must be controlled and put to rout. This demon is used by enemies toward one another to destroy factories, business, homes, farms and the moral of the populace.

"It is well known that this demon which destroys life and property has been used by our enemies from within to take whatever toll it can.

"The first important duty as firemen is to prevent fires. Fire Prevention and Fire Control is one of our best defenses. We should take part whole-heartedly in fire prevention activities, not just because we are firemen, but because we are Americans."

Nine District Fire Schools Scheduled

Nine fire schools for volunteer firemen were scheduled in Iowa this fall under the auspices of the state advisory committee on fireman training and sponsored by divisional firemen's associations. Locations and dates of the schools to be held are Creston, October 15; Denison, October 21; Pocahontas, October 22; Mason City, October 23; Cedar Falls, October 24; and Keokuk, October 28.

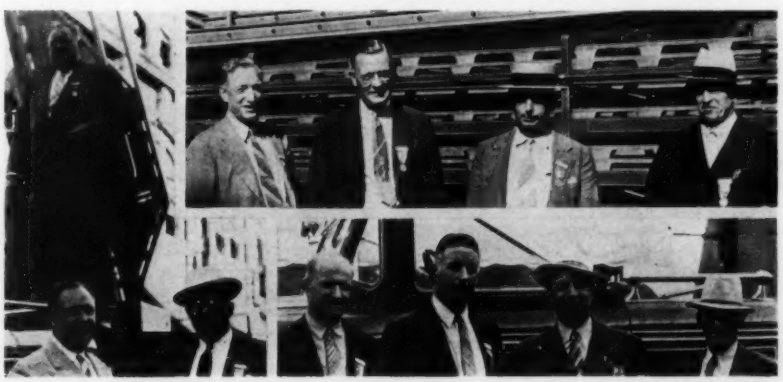


Photo by Hugh Walker

Reminders of the I.A.F.C. Convention at Spokane

Left: (on platform) Chief F. J. Ertle, Jersey City, N. J. (Below) Chief C. E. Delaney, Lakewood, Ohio, and J. O. Binford, Gen. Sales Mgr., American-La France Foamite Corp., Elmira, N. Y. Upper right: (l. to r.) Chief Geo. Knol, Cicero, Ill.; Chief John O. Nygren, Joliet, Ill.; Chief Albert Luedeke, Freeport, Ill.; and Chief August G. Schmidt, Rock Island, Ill. Lower right: (l. to r.) Chief Geo. M. Twaddle, Reno, Nev.; Chief Geo. Robinson, Yuma, Ariz.; Batt. Chief Ed. Boatright, Portland, Oreg.; and Capt. John J. Hunt, Los Angeles County Fire Dept.

Introduction to a Fire

By DONALD HOLBROOK

The publication of this article represents an innovation in FIRE ENGINEERING, for it is the first time that fiction has found a place in the columns of this journal. Mr. Holbrook describes in very realistic manner a hypothetical case where the Mayor of a city reversed his opinion relative to the need of new fire apparatus after witnessing the fire department in operation at a threatening fire. This story should prove good ammunition for overcoming opposition to the purchase of needed fire apparatus.

The author is Chairman of the Boston Chamber of Commerce Committee on Public Fire Protection, Member of the Advisory Council to the Commissioner of the Boston Fire Department, and Civilian Aide to the Chief of the Newton Fire Department.

—EDITOR.

THE new Mayor of Custer City threw dignity to the winds and peeled off his coat and vest. Inside the Mayor's office, the steam heat thumped in the radiators and spread a hot stuffiness depressing to the mental calculations of His Honor; outside, however, it was cold, and icy ruts had furrowed streets only lately ploughed after a heavy snow-fall. It was late afternoon and most of the City Hall's large coterie of workers had departed for their homes and supper. On the Mayor's desk was a well-thumbed copy of last year's budget.

The Mayor, freed from the restrictions which his coat had seemed to impose, once again set to work on the long columns of departmental figures. His pencil totalled here, marked there, and frequently drew a heavy line through some of the larger items. A new budget for the ensuing year was due this very week, and requests for appropriations from his department heads would arrive on his desk in the morning. Well, he would be ready for them. With the aid of last year's budget figures he already knew where he intended to cut, and cut he would, and that deeply.

Austin Jones had been elected Mayor by only a small margin over his opponent, whose large political following had seemed to assure him of success at the polls. Austin Jones was probably as much surprised as his friends, when the final tally proved that he had beaten a political machine of no mean power in the community. He had fought hard and cleanly and was immensely gratified at the result. Economy had been the watchword of his campaign and he fully intended to live up to his word. The cost of city government must come down. He would give the taxpayers a square deal.

AGAIN the Mayor's pencil followed the column of figures; School Department, Police Department, Fire Department—his pencil paused, ah, there was something he felt he knew about. He recalled hearing about the low fire-loss record of Custer City. Why, it was a byword in insurance circles. He had met the city fire chief and had been impressed by his sincerity and obvious efficiency. Someone had told him that the running costs of this department were very low. Of course the Chief had always recommended changes and improvements at budget time involving substantial sums of money—but the Mayor's predecessors had always cut them down to a shadow of their original substance. Well, he could, if they could. Here was one place where he would be free from outside pressure, and it was a good department—everyone knew that.

The Mayor was so pleased with these last thoughts that he decided to call it a day. He looked out the window, partly frosted from the clear cold outside. A mile in the distance, on a high hill, he could see a regular pattern of light reflecting the silhouettes of several large buildings, The Children's Hospital, of which Custer City was justifiably proud. Only last week he had visited this institution. Under the personal guidance of the Superintendent, a woman of outstanding ability, he had covered every floor in a tour of inspection. Perhaps because he had just checked the fire department figures he remembered that he had seen in the main hospital entrance a fire box, and noted the simple number—55. There was one place that should have complete fire protection, and apparently they had it.

Recognizable symptoms from the region of his stomach brought the Mayor to other thoughts. Tomorrow was another day, time enough then to wrestle with the budget.

THE Chief of the Custer City Fire Department was hungry, too, but supper seemed a long way off. His driver looked hopefully through the open office door, but his Chief was still leaning back in his chair, a worried look on his usually calm and stern countenance.

Once a year Chief Ormond faced what, to him, was a crisis in his administration. Once a year, and for many years, he had had to rely on his dogged perseverance to carry him through the cruel disappointment of his heavily slashed appropriation.

The Chief had served his city faithfully, earned a well deserved reputation as a calm and able operator at a fire; and had done the work of three men in carrying, alone, the burden of his several departmental divisions. This last accomplishment had saved substantial sums, which, in other cities of comparable sizes were spent for competent assistants.

The Chief asked only for the really necessary improvements in order to cope with the conditions of a rapidly growing city and to protect the lives of its citizens. He had no grandiloquent ideas of making his department a show place for the fire minded, but he recognized that the science of fire fighting was progressing rapidly.

New types of apparatus of advanced design had proven their particular worth in action. In other cities, adequate quarters for firemen had been provided, and housing conditions measurably improved. Custer City still had two old fire houses, relics of the horse age, which literally smelt to heaven, and a few daubs by the W.P.A. had only served to emphasize their inadequacy.

Most important, he needed more men, needed them badly. Why, at meal hour, when more than a third of his force was temporarily off duty, he dared not think of the occasion which might arise to test all of his resources. This year he really must put over his oft-requested purchase of a second aerial ladder truck. There could be a tragedy on the East Side of the city with those new tall

buildings, and his one aerial truck now located three miles away.

Civilians and city officials in particular had funny reactions on fire department matters. They gave no weight to the luck in the fire game. As long as the property loss was reasonably low, and the daily routine of the department functioned smoothly, there was no need to worry. What a commentary on intelligence to realize that it took some unexpected and horrible disaster, fortunately a rare occurrence, to obtain sympathetic understanding of the pressing needs of a fire department—and tomorrow he must hand in his request for an appropriation and his share in the budget. Would it be the same old story? It was a dog's life after all, no pat on the back, no stimulation for initiative, and always that burden of great responsibility—the lives of other people.

THE Chief's reverie was sharply broken as the tapper on the register platform commenced striking a box number. His driver, at the first stroke of the bell, had rushed out into the hall, and was on his way down to the Chief's car, leaving the checking of the number to his superior. In a few seconds the Chief had joined him and they had started on a long run to a box, which was near the west end of the city limits.

The fire was in a small unused barn and presented no particular problems. There was enough volume of fire, however, to require a large amount of water, and the reduced crews of two pumping engines and a ladder truck were busily occupied. The spread of the flames was soon checked, and the Chief turned over the command to his deputy.

Supper for the Chief was now in order. His driver had stayed by the car, which was parked some hundred yards away from the scene of the fire, in order to be in touch with Headquarters by radio. Suddenly he came running towards the Chief. Not waiting for a near approach he shouted, "Box 55, Chief." Box 55, a half a mile away, in the same division —The Children's Hospital.

Now every firebox automatically calls for a certain number of pieces of fire apparatus, usually from the nearest station houses. If another fire occurs at the same time, or while the first assignment is still working, an automatic designation and response takes place from those still in their quarters.

It is obvious that if the second fire is in the same neighborhood as the first, a much greater distance will have to be covered by those responding, with resulting delay in reaching the scene of the fire. Chief Ormond had this factor very much in mind as his car slithered and bumped over the icy ruts. He mentally calculated the time it would take the first piece of apparatus to arrive at the box location. The bad going would double the usual running time, and the nearest station on this second run assignment was approximately three miles away.

A HOSPITAL fire presents a grave life hazard and calls for the early arrival of a large force of men. But the incoming companies would be short-handed at the supper hour. Chief Ormond decided that he would take no chances if real fire was showing, and would immediately sound a second alarm. This action would draw on his remaining companies for man power, although he was still faced with further delay. He congratulated himself that he had recently ordered his one aerial truck to respond on this particular box, even if it meant a long run, and left the business section of the city unprotected.

A violent lurch, and rounded corner, and the high hill on which the hospital was located stood before them. They could see flames reaching out the windows on the top floor of one of the smaller buildings. That was a break—no patients in that building, but awfully close to the main wing, which towered above it. The chief picked up the radio-phone, which was attached to the instrument board of the car.

"WF calling fire alarm, WF calling fire alarm."

"O.K. WF, come in."

"Send out second alarm for Box 55."

"O.K. Chief, second going out."

In the three remaining stations where apparatus was available, the tappers were sending out their message to hurrying men, to whom that signal meant a serious fire and plenty of action. Simultaneously fire companies from neighboring cities were converging on the area left unprotected to cover in until the home companies returned.

The car skidded, recovered and then turned into the drive rising up the steep incline. A number of nurses formed an excited group at the building entrance. Standing apart in the driveway the superintendent calmly awaited the Chief's approach.

"Anyone in that building, Mrs. Trent?" the Chief's eyes were taking in every detail of the building, and its approaches, as he spoke.

"No, Chief, last one out, and all accounted for. We are ready to move the children from the East Wing if you give the word."

"Not yet, not yet." The Chief turned to his driver—"Keep the lane open for that aerial truck. She'll be the last to arrive, and we need her now."

The first pumper had turned the driveway entrance. Its exhaust drummed hollowly as it labored up the hill. Order followed order with staccato rapidity as the lines were run and the cry "O.K. on the water," produced the first jets to reach out and strike the flames. A company was inside the building—one could bear the hoarse shouts of the officers directing their men.

The aerial truck, where was the aerial truck? It should be here by now: Chief Ormond, watching the wind carry the sparks toward the tall East Wing set his jaw.

The Chief turned to the Superintendent, who had remained close by.

"Have the children moved, Mrs. Trent, I can't spare any men unless it is absolutely necessary."

A figure detached itself from the now large group of curious onlookers. Austin Jones felt a responsibility, and intended to exercise it.

"Chief, you must give the superintendent some men to help move those children."

Chief Ormond glared at his political superior. "I'm handling this fire, Mr. Mayor. I am short handed. The aerial truck must have had an accident. There is no real danger for the children yet, and if there is we will bear a hand. Now, stand back."

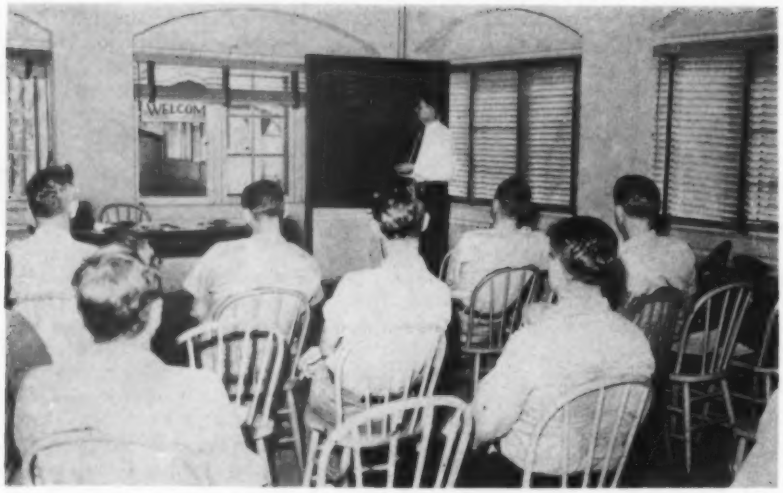
Mayor Jones recognized the voice of determined authority and quietly rejoined the onlookers, but through his mind ran the phrases "short handed" and "no aerial truck." There was more to this business than he had thought. He would have to look into it.

The wind died down, the smoke changed from a sickly yellow to a light grey, the last vestige of a flame disappeared. It was a good stop, a lucky break.

A mile away a twisted aerial truck gave evidence of the impact with which it had skidded into the snow banked curb, its crew still struggling to free the heavy tractor from its hazardous position.

MAYOR Austin Jones arrived early at his office, and briskly at-

(*Continued on page* 531)



Lieut. Allen E. Erwin, Jacksonville, Lectured on "Duties and Responsibilities of Officers"

PRACTICAL INSTRUCTION PROVIDED AT FLORIDA STATE FIRE COLLEGE

Each Student Required to Complete Thirty Hours Work in one Subject— Certificates and Diplomas Awarded

THE Florida State Fire College, a school of practical instruction in approved methods of fire fighting, inspection, maintenance and care of equipment, first aid and officers' training, held its eleventh annual session at Daytona Beach, Fla.

This institution was founded and is sponsored annually by the Florida State Firemen's Association, which, through the first ten years of the college's annual sessions, directed the course of instruction and selected the staff of instructors.

This year, for the first time, the college was conducted by the State Department of Education under the direction of Colin English, State Superintendent of Public Instruction, with Robert D. Dolley, State Supervisor of Trade and Industrial Education, directly in charge—these officials working, of course, in direct cooperation with the Firemen's Association. J. F. Mac Millan, Chief of the Cocoa, Fla., Fire Department, acted as Coordinator.

The college this year was attended by 137 firemen, representing sixty-seven cities and towns of all sizes. The student body included paid and volunteer firemen.

Service Training Plan Adopted

This year, for the first time, the Florida State Fire College adopted and carried out the service training plan as used in Oklahoma and many other states, with five daily sessions, forenoon and afternoon, to give thirty hours of instruction, six hours a day, with a general assembly for lectures and round table discussions each evening from 7:30 to 9:30.

The school was conducted on the unit subject plan, whereby every student enrolled was required to complete thirty hours' work in one specific subject of the five units on the course. Each fireman enrolled in the school thus studied one unit subject, receiving a certificate at the end of the season's course if he completed the work, and a fireman's diploma at the end of the five years.

In the future, under this plan of education, firemen of the state will be enabled to receive in their home towns itinerant training given by instructors certified as teacher-trainers by the State Department of Education.

All of the instructors in the college have had from ten to twenty years' experience in fire department service, together with courses in teacher training. Next year, the College will start an advanced course in addition to the basic course.

In the eleven years that the Florida State Fire College has been conducted, fire insurance losses in the cities and towns of the state have shown a material reduction—due, partly at least, to the instruction given by the college.

To supplement the work of the class room and the evening lectures, the Daytona Beach Fire Department has erected each year on the main station grounds a four-story fire drill tower for practice demonstrations.

Daytona Beach was selected eleven years ago by the Firemen's Association as the permanent site of the annual college sessions. Daytona Beach is situated on the east coast of Florida. The municipal casino, where the college sessions are held, overlooks the Halifax River, which flows through the middle of the city, and the main fire station stands on the bank of the river. The situation is considered ideal for a summer college, for the climate is comparatively cool and the nearby ocean beach offers plenty for recreation.

During the eleven years of the college, more than one thousand firemen have received practical training at the college sessions.

Following is the schedule of courses presented at the college this year, with a description of each of the five unit courses:

Curriculum and Course Descriptions

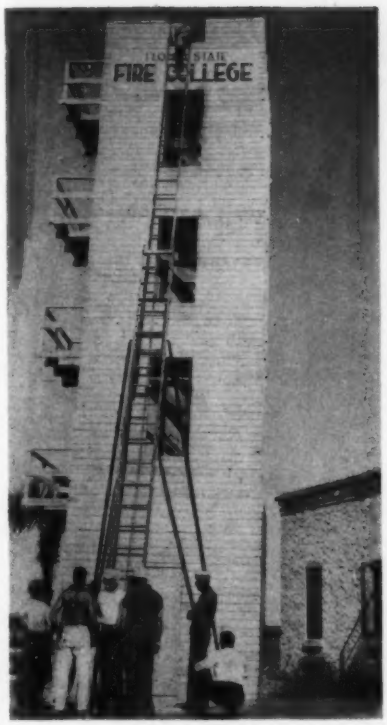
Unit I. "Forcible Entry and Minor Extinguishment Practices."—Chief W. R. Anderson, Ft. Myers, Florida.

A basic course suited for the initial training of all new recruits recently added to departments. Those of considerable experience who have never had organized instruction in these operations will also find it profitable.

Unit II. "Ladder Practices."—Lieutenant J. W. Davis, Miami, Fla.

Intended to analyze and demonstrate methods of carrying, placement and removal as well as maintenance of ladders so as to expedite their use with efficiency and safety.

Capt. A. M. Willis, Miami, Had a Class in Salvage and Overhaul Practices



Ladder Practice in Charge of Lieut. J. W. Davis, Miami

Unit III. "Hose Practices."—Assistant Chief J. R. Larrabee, West Palm Beach, Fla.

Intended to expedite the laying and handling of hose so as to assure the maximum delivery of fire streams to the most effective locations that are possible with any given equipment. Also the proper removal, drying and storing of hose as well as the maintenance of lines and couplings so as to reduce rapid depreciation and prolong the life of such equipment.

Unit IV. "Salvage and Overhaul Practices."—Captain A. M. Willis, Miami, Fla.

A discussion and demonstration of the most rapid and effective methods of placing covers and providing drainage to reduce water damage and of cleaning up the premises after an extinguishment in such a manner as to leave the minimum possibilities for looting or hazards to public safety.

Unit V. "Fire Fighting Tactics."—Chief J. B. Chancey, Jacksonville, Fla.

A practical treatment of the most approved and effective procedures to be followed in the handling of fire calls at the scene of the fire. This includes an analysis or sizing up of the situation, selection of a suitable plan of attack and the pursuing of this plan through to successful completion. Typical situations are assumed, or simulated in practice, and various proposed plans are analyzed and criticized by members of the class with qualifying experience.

Unit VI. "Duties and Responsibilities of Officers."—Lieutenant A. E. Erwin, Jacksonville, Fla.

This course deals with the organization and administration of departments or isolated companies of only a few men. It is intended to be helpful to any persons who are obliged to take command or to direct operations of a company. Lines of authority for larger departments as well as the duties and functions of each individual taking part in evolutions and tactics are discussed and designated.

The time devoted to actual instruction was limited to six hours daily, or a total of thirty hours for each unit subject. Three hours were spent each forenoon in classroom work and three hours were spent each afternoon in practice and drill evolutions. The daily instruction schedule extended from 8:30 a.m. to 4:30 p.m.

In addition to the daytime classroom and practice courses, a program of lectures, demonstrations, speeches and entertainment features was offered each night from 7:30 to 9:30 p.m.

Fire! Its Cause, Prevention and Control

The latest educational safety booklet in the field of Fire Prevention and Control by Harold Joe Davis has been released from the press and is entitled, "Fire! Its Cause, Prevention and Control." This fourteen-page booklet contains a concise story of fire starting, with the principles of combustion, and carrying through to suggestions for fireproof construction.

The different types of fires are classified in four general groups according to the way in which they can be extinguished in their early stages. Then there is a discussion of the successful extinguishing agents with relation to their ability to extinguish the different classifications of fires.

Copies of this booklet may be obtained from its author, Harold Joe Davis, 3927 East Admiral Place, Tulsa, Okla., for twenty-five cents each.

Massachusetts Firemen Discuss Shorter Hours

Nearly 300 firemen, representing practically every city and town in Massachusetts, met at the sixty-first convention of the Massachusetts State Firemen's Association at Holyoke, Mass. Captain John H. Day of the Lynn Fire Department was re-elected President of the Association.

The other officers elected are: First Vice-President, George I. Crowley, Salem; Second Vice-President, Francis A. Harvey; Directors, William C. Mahoney of Peabody, J. J. McGonagle, Boston, and Louis A. Shea, Fall River; and Sergeant-at-Arms, John Adams, Worcester.

For two hours during the business meeting a stormy debate was held on the question of a seventy-hour-week instead of the "long day" plan of eighty-four hours per week. After a heated discussion, the question was left to a committee of fifty.

New Hampshire Firemen Meet

During the early days of September, the New Hampshire State Firemen's Association held their forty-third annual convention in Keene, N. H., which 250 delegates attended.

Officers elected were as follows: President, Chief Eugene B. Reilly of Keene; Vice-Presidents, Herbert L. Duprey of Nashua, Chief Edward LaPage of Berlin, Lieutenant Edward Fremau of Hooksett, Chief George Adams of Exeter, Edward T. Shields of East Jaffrey and Harry G. Robinson of Conway; Secretary, Captain and Acting Deputy Aubrey G. Robinson of Manchester; Sergeant-at-Arms, Joseph Sinclair of Exeter. Chief William T. Happny of Concord and Deputy J. Molloy of Nashua were re-elected to the executive committee.

After twenty-seven years of service as Secretary of the Association, Oscar P. Stone retired, being succeeded by Captain and Acting Deputy Aubrey D. Robinson.

New York Firemen Learn the Use of the Pneumatic Drill

New York City firemen are shown getting some practical experience on how to use pneumatic drills which have become an integral part of the city's fire fighting equipment. Deputy Fire Commissioner George L. McKenna, at the right, is in charge of the training program.

Radio Proves an Indispensable Department Asset

EVERY year, in increasing numbers, Fire Departments throughout the country are awakening to the advantages that are available in routing and dispatching trucks on various duties, through the use of the radio. As a result, an ever increasing number of the departments are installing either one-way or two-way sets on the apparatus. In order to determine the extent of the installation of radios by the various departments, a survey was made by FIRE ENGINEERING among a representative group of Fire Departments. In the pages following are outlined the various opinions on the use of the radio of those reporting. Therein may be found many useful suggestions for increasing the efficiency of the department as a whole.

San Diego, Cal.
J. E. Parrish, Chief

The Fire Prevention car and the fire boat have one-way sets installed. The cars of the Chief, Assistant Chief, and two Battalion Chiefs, and the Police Alarm Telegraph car have two-way sets. We have found the radio beneficial in establishing communication between the chief officers and the Fire Alarm Office, also in communicating with the Fire Boat when it is out on the bay. I will say that the radio is very beneficial, but not indispensable.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use sets through the radio station with our Fire Alarm Bureau. There is a qualified operator on hand at Police Headquarters twenty-four hours a day.

We use Philco radios.

Zanesville, Ohio
C. H. Hatfield, Chief

We have a two-way set installed on the Chief's car at the present time. We expect to add another on one of the pumpers in the very near future.

The radio enables us to keep in touch with the department all the time that we are out. This is very beneficial, especially in case of fires.

I believe that the radio is of material help to efficient fire fighting. Our radio is operated in connection with the police radio. There is a qualified operator on duty at the Police Headquarters twenty-four hours a day.

Pawtucket, R. I.
N. Taupier, Chief

There is a one-way radio in the Deputy Chief's car and a two-way radio installed in the Chief's car. That is all we have installed at present. These radios have been found to be very beneficial in calling additional help in a hurry, such as pumpers, and ambulances.

Our radio is operated in connection with the police radio. We are connected

Providence, R. I.
T. H. Cotter, Chief

We use one-way radios in our department. There are ten sets in all. We have found them beneficial in emergency calls, in dispatching the chief officers to fires, and in emergency repairs. Chief officers are at the scene of the fire immediately through radio announcements.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. We use American-Bosch equipment and sets built by the Police Department.

South Bend, Ind.
C. J. DeVleeschower, Chief

Two Chief's cars are equipped with two-way sets. We have found the radio most beneficial in relaying additional alarms and emergency calls; in the verification of all alarms while responding, which eliminates any possible misinterpretation; in the rechecking of erroneous calls and false alarms. It is valuable because of its speed and accuracy over all other forms of communication.

Our radio is operated in connection with the police radio, with a qualified operator on hand at Police Headquarters twenty-four hours a day. We use R. C. A. receivers.

Gary, Ind.
Robert Mcguire, Chief

We use both one and two-way sets in our department. The fire Chief and the Assistant Chiefs' cars have two-way radios installed, while the Fire Prevention Bureau car is equipped with a one-way radio. Our city has an area of about forty-two square miles of territory, and we find the radio most beneficial in notifying the chief officers of additional fires when they are on calls. We also find it beneficial to use the radio for calling additional companies when needed. Our chief officers' cars are also equipped with amplified speakers, and we find them most useful in directing companies at fires.

Our radio is operated in connection with the police radio, with a qualified operator on duty twenty-four hours a day. We use General Electric equipment, Model GIB-3 with a projection speaker.

Toledo, Ohio
F. T. Schlorf, Chief

Seven Chiefs' automobiles and two Rescue Squads are equipped with one-way radio sets. All fire stations are equipped with short wave radios. Cars so equipped are in touch with the Fire Alarm Office at all times. Fire alarms are transmitted to the stations by radio from the alarm office; we find that it speeds up the response.

Our radio is operated in connection with the police radio, with a qualified operator on hand at Police Headquarters twenty-four hours a day. We have American-Bosch sets installed in the automobiles, and Link sets in the stations.

Wilmington, Del.
W. J. Lutz, Chief

We have one-way sets installed in the fire stations, and two-way sets installed in all of the chief officers' cars. The radios are very beneficial, being a means of direct contact with the operator at all times while on the street and fire grounds. In outlying districts, where 'phone and boxes are not readily accessible to call for additional help or cover up; in the transmission of such orders as necessary with a minimum of time lost. All local alarms are put on the air.

Our radio is operated in connection with the police radio, with a qualified operator on hand at Police Headquarters twenty-four hours a day. All sets are built by the Radio Division of the department with first class licensed operators. Eight drivers hold second class licenses.

Little Rock, Ark.
Joe Carmichael, Chief

The Chief's and Assistant Chief's cars are equipped with one-way radio sets. We have found them very beneficial, especially in stopping cars from making unnecessary runs to fires. The Little Rock Fire Department will soon be equipped with two-way radios also a loud speaker system installed in all stations.

The radios are operated in connection with the police radio. There is a qualified operator on duty at headquarters twenty-four hours a day. We are using Motorolas at the present time.

Baltimore, Md.
Howard Travers, Chief

We use both one and two-way radios in our department. Twenty-one cars are equipped with one-way sets, and seven cars are equipped with two-way radios. We have found radio beneficial principally for the return of fireboats responding to alarms of a fire where their services are unnecessary. Also the Deputies and the Battalion Chiefs of the Fire Department can be easily contacted, in case of alarms of fire, while they are traversing the public highway, as an aid to the efficiency of the fire service. I believe that radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at the Police Headquarters twenty-four hours a day.

We use American-Bosch receivers, and transmitters built by the Fire Department.

Washington, D. C.
S. T. Porter, Chief

A two-way system is now being installed in eleven cars. The system has not been completely installed as yet; however, our limited experience with them has proven very beneficial. Our radios will be operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We are using Western Electric equipment.

Hartford, Conn.
M. T. Keane, Chief

The Chief's car is the only car that is equipped with a radio, and that is a one-way set. I have found it beneficial in that I can keep in constant touch with headquarters, receiving fire calls, and emergency calls other than fire calls over this set.

The radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use General Electric equipment.

Buffalo, N. Y.
W. R. Castimore, Chief

Ten of the chief officers' cars and a fire boat are equipped with one-way sets, while the Commissioner and the Deputy Commissioners have two-way sets installed in their cars. We have found the radio very beneficial in keeping the chief officers in touch with headquarters at all times; in being able to direct the operations of the fire boat when it is in mid-stream; and in being able to issue orders to the office by way of the two-way set. I believe that the radio is an asset to efficient fire fighting, and its use will increase as its benefits are recognized.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. The radios used in this department were built by the Police Department.

Memphis, Tenn.
I. M. Klinck, Chief

We use both one and two-way sets in our department. All one-way sets are installed on pumper and truck companies. All two-way sets are installed on the chief officers' cars. We have found the radio beneficial in that it provides instant communication between the chief officers and the fire alarm office; it tends to reduce the danger of accidents due to the face that part of the assignment of apparatus responding to a minor fire is often stopped enroute; it enables the apparatus to be in service enroute to and from fires, and at all times, except when engaged in actual work at the scene of the fire; and it enables the chief officers, at a multiple alarm fire, to instruct the apparatus as to the positions to be taken as well as other data that are important in handling the fire.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Philco and Motorola receivers and R. C. A. transmitters.

Boston, Mass.
J. A. McCarron, Radio Technician

The cars of all of the chief officers are equipped with one-way radios, and three fire boats are equipped with two-way sets. Since the initial installation in 1923, the use of the radio has been found highly effective in the rapid response of apparatus.

Our radio receives signals from stations operated under the Marine Fire Classification. There is a qualified operator on hand twenty-four hours a day. We use Collins transmitters and American-Bosch receivers.

Muskegon, Mich.
Chris. Smith, Chief

We use one-way radios in our department. They are installed in the Chief's and the Assistant Chief's cars. I do quite a bit of inspecting, and therefore I am away from the station often. The operator can contact me at any time over the radio.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use American-Bosch receivers.

New London, Conn.
T. H. Shipman, Chief

We use one-way radios in the department. The Chief and the Deputy Chief have one-way sets in their cars. There are only two officers in this department, one being on duty at a time. While either of these officers is out on inspection work, it is the only form of communication we have to contact them in the event of an alarm. I believe that the radio is an absolute necessity in effective fire fighting in an up-to-date modern Fire Department. Its immediate form of communication has proven itself invaluable. Our radio is operated in connection with the police radio, with a qualified operator at Police Headquarters twenty-four hours a day. The transmitter was built by the Police Department and is 100 watts. The receivers are made by Philco.

Waterbury, Conn.
Thomas Cavanaugh, Chief

We use a one-way radio in our department. The Chief's car is equipped with a one-way set, but it is going to be changed to a two-way set. The one-way set will be fitted in the Deputy Chief's car. We have found the radio beneficial for when the Chief is outside the fire grounds; he can be contacted at all times.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use an American-Bosch receiving set.

Louisville, Ky.
E. A. McHugh, Chief

We employ radios in the cars of six of the chief officers. These radios have been beneficial in dispatching officers to fire while away from headquarters. All chief officers are aware of all fires while away from their quarters; in other words, they are on the "track" at all times. Our radio is operated in connection with the police radio, and there is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use an American-Bosch receiver.

(To be continued)

Chief Thomas F. Burns Dies

Chief Thomas F. Burns, of the Bridgeport, Conn., Fire Department, died on Oct. 9, while fighting a two-alarm tenement house blaze.

Chief Burns had just ordered a second alarm sounded and proceeded to take his men into the house to fight the flames when he collapsed. He was carried outside by his men to a waiting ambulance which removed him to the hospital. Attempts to revive the Chief were unsuccessful.

The Late Chief Thomas F. Burns

He had served forty-five years as a fire fighter, during which time he became recognized as an outstanding leader in the fire service. The last twelve years he served as Chief of the department, being responsible for many modern improvements during his term of office.

Chief Burns was born in Bridgeport in 1874 and became a call man in 1895 in the Bridgeport Fire Department. About eight months later, he was made a permanent member. His first assignment was as driver of the old horse drawn hose wagon at Engine No. 4. He worked steadily upward in the department, his first promotion coming in 1908, when he was made Captain. Eight years later he was made Assistant Chief Engineer. Following the retirement of the late Chief Johnston, Thomas Burns was made Chief.

Among the many improvements in the department brought about by Chief Burns, was the installation of the "talk-alarm" system installed in 1936 to enable firemen to get to the fire faster and to receive more accurate directions as to the location of the fire. It has eliminated confusion.

During his administration, Chief Burns was honored three times by the New England Fire Chiefs Association. He was named Second Vice-President in 1932, first Vice-President in 1937, and President in 1938.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SPREAD OF FIRES BY WAY OF AIR CONDITIONING SYSTEMS

WHILE inventions have been of considerable benefit to mankind in making some tasks easier or in promoting a better standard of living, there are also new problems that are introduced with the adoption of these devices.

For example, there is the gradual widespread use of air conditioning systems. To cool the air in a building, flues or air ducts are installed as part of the system. In case of a fire, with fans operating, these same ducts become flues through which the fire is drawn and sent to remote parts of the building.

In this discussion are related the experiences of some chiefs with that type of fire. The problem in full is stated in the box on this page. In the box on the following page, is the question that will be discussed in the following issue.

Discussion of the Question

Irby Klinck, Chief, Memphis, Tenn.: During the past several years we have had three fires involving air conditioning systems in buildings. One occurred in St. Peter's Church. Another occurred in Halle's Gents' Clothing store, located on the second and third floors of a sixteen-story office building. The third occurred in the restaurant of the Chisca Hotel.

The fire in St. Peter's Church originated in the furnace room in the basement of the building, and smoke spread through the fan houses in the basement, thereby going through the ducts and grills into the church proper, causing extensive smoke damage to valuable paintings and interior decorations. The loss was computed at $20,000.

The office building fire occurred during the installation of the air conditioning system, and caused considerable smoke damage to clothing and fixtures, its loss being between $15,000 and $20,000.

The fire which occurred in the restaurant of the Chisca Hotel was caused from grease igniting on the hood or canopy of a cook stove, heating the rock wool in the air conditioning system. The loss was adjusted at $5,000.

At the present time, we are working on a bill to present to the next Tennessee Legislature governing air conditioning installations. Some of the points to be covered are installation of thermostats in fan houses, automatic shutters operating by fusible links, open head sprinklers in fan houses, and fusible sprinkler heads in long passageways or excessive areas covered by the system. In forming these regulations, we are using extensively materials furnished on the subject by the National Board of Fire Underwriters and the National Fire Protection Association.

Olander Lind, Chief, Kansas City, Kan.: We have not had fires spread through any portion of buildings involved as we have regulations preventing such installations. We have, however, had fires in basements which involved the equipment, but without any serious effect.

I secured the adoption of a city ordinance which not only makes it mandatory to install fire dampers and fire stops, but it also makes it necessary to have thermostatic equipment for various purposes in the equipment, all of which automatically shuts down the entire plant in the case of excessive temperatures. In addition to the fire hazard, we also specify the type of refrigerants that may be used as we do not permit the more toxic gases. I presume that this is a little farther than some have gone in the control of air conditioning equipment, but it has already proven of benefit in a basement fire where the entire contents of the unit were liberated with no ill effect on the firemen.

C. E. Harris, Chief, Akron, Ohio: Installations for air conditioning systems, either old or new, must have metal lined ducts between walls, so that in case of fire on upper floors, sparks will not lodge on lath or siding. On large installations cold air ducts do not reach the ground, but take air from near the roofs of buildings. This prevents any sparks or flames from ground fires being drawn in the cold air ducts, thereby preventing any distribution through the system.

Outside air take openings also are required to have approved automatic fire doors or shutters.

All air conditioning equipment must be installed in conformance with the National Electrical Code.

J. Nygren, Chief, Joliet, Ill.: Our regulations require that no combustible material shall be used in air filters. Where a flammable or highly toxic refrigerant is employed for air cooling, no soldered joint in any pipe or coil containing such fluid shall be placed within any air passage. Every fan used in any way for recirculation of air in connection with an air conditioning plant shall be equipped with a suitable automatic device controlled by fusible links in each of the return ducts which will disconnect the fan in case of excess temperature in such return ducts.

P. C. Ward, Fire Warden, Duluth, Minn.: Air conditioning systems in connection with heating plants are regulated by city building code. Insulation, no nails or solder are permitted in metal ducts.

We feel that any and all air conditioning systems should be regulated for proper installation and should conform closely with the National Board of Fire Underwriters' recommendations.

Owen A. Owens, Chief, Ogden, Utah: We recently had a fire call to the rear of a building housing an apartment hotel and theatre. Upon arrival, it was discovered that smoke had entered the theatre by means of the air conditioning system. This smoke was caused by rubbish burning around the vent of the air conditioner. The rubbish had been set afire by a carelessly thrown cigarette from a window of the apartment hotel.

The building code governs the installation of the air conditioning systems and the electrical wiring connected with these systems. We endeavor through our systematic fire inspections to have accumulations of rubbish removed from around these vents as a fire prevention measure.

F. A. Taylor, Chief, Colorado Springs, Col.: So far, we have had no fires involving air conditioning systems, but we do have an ordinance regulating their installation. We drew our ordinance to require these installations to be made in accordance with the regulations of the National Board. This will save us the trouble of revising the ordinance from time to time in order to meet changing conditions. Our ordinance further provides:

"Section 2: No air intake or exhaust outlet of any air conditioning or ven-

HERE IS THE PROBLEM

Have you had any fires which extended through buildings by way of air conditioning systems?

If so, what type of structures did they involve?

Have you any regulations governing installations of such systems to reduce the fire hazard therefrom?

If so, briefly what do they include?

tilating system or any blower or exhaust system shall be located in a position which offers any unusual or exceptional fire hazard; and all return air ducts shall have cleanout or access doors so that the same may be readily cleaned.

"Section 3: All grease vents in any air conditioning or ventilating system or any blower or exhaust system installed in any hotel or restaurant kitchen shall have cleanout or access doors and shall have at least one sprinkler head installed in the vent duct with connection to the water system."

The ordinance also provides that a permit must be secured from the City Engineer before any installation or repairs can be made to an air conditioning or ventilating system or any blower or exhaust system.

Edward J. Cannon, Chief, Norfolk, Va.: We have not had any extension of fire due to air conditioning systems.

We do not have any building regulations covering air conditioning at present as our building code was made up before the advent of air conditioning, but the new code which the city is preparing now will, in all probability, have some safety regulations covering same.

The hazard connected with these systems would be the quick spread of fire and smoke by way of the air ducts from floor to floor and from one section of floor to another.

The installation of fusible links on dampers located in all branch ducts and at floor levels will greatly reduce the quick spread of fire, but due to heat expansion interfering with these dampers closing properly, the clearance allowed would still leave the smoke hazard a serious problem and would require quick ventilation by the first assignment of truck companies.

N. A. Phelan, Chief, Pittsburgh, Pa.: Due to very good fortune and the fact that the men of the Bureau keep close watch on all buildings under construction, where an air conditioning system is to be installed, we have had no fires extend through buildings by way of air conditioning systems.

It is necessary that the firemen keep close watch on these installations for the reason that we do not have any regulations governing installation of air condition systems. I have tried for three years to have the Building Inspection Bureau include some regulations in the Building Code, but without avail. Where there is a system being installed, we contact the owner and contractor. We have been successful in having them cooperate with us.

In all cases we suggest the use of Freon as a refrigerant.

E. P. Welch, Chief, Columbus, O.: I am very happy to state that we have never had a fire that extended through building by the way of the air conditioning system. Just what has stopped fires from occurring where they can travel in this type of construction is just another one of those things, for we have plenty of systems in our city that this could occur in. Buildings regulations carry very little on the installation, especially from the standpoint of travel by fire.

S. T. Porter, Chief Engineer, Washington, D. C.: While we had had fires in which the air conditioning systems served to spread smoke throughout the buildings, we have not had any fires which spread due to the existence of air conditioning ducts. The two fires involving the spread of smoke were in a fireproof office building and a large dwelling.

We have prepared regulations to govern the installation of air conditioning systems and which are at present awaiting final approval by the Board of Commissioners.

Luther P. Willis, Chief, Pueblo, Col.: We have never had a fire extend through a building by way of the air conditioning system. Our code is not iron-clad so as to enforce the correct installation of air conditioning systems, although our Building Inspector is, and has been, working on something that will give us better protection under the present conditions. We do try to have the systems installed as nearly correct as we can.

Richard Widmann, Chief, Madison, Wis.: To date we have had no fires of this type. The installation regulations are governed by the State Heating and Ventilating Codes, which are enforced by State inspectors and by the Building Commissioner's department locally.

W. H. Joynes, Chief, Richmond, Va.: So far we have not had a fire that started or was spread by way of air conditioning systems.

All our air conditioning systems are put in under the supervision of the Building Inspector. He is very careful in allowing permits for these systems, putting every safeguard possible when installing an air conditioning plant.

Earl A. Traeger, Chief, Minneapolis, Minn.: As far as we are able to find out, we have had two fires which extended through portions of the building by way of air conditioning systems; one was in a large theater and the other was in a large private dwelling.

The ordinance and regulations governing the installation of air conditioning systems in Minneapolis require that automatic dampers with fusible links must be installed on each side of a fire wall where ducts pass through. All ducts must be of incombustible material and if lining is required in ducts, the lining must be incombustible. All oil filters are required to meet the Underwriters' regulations for the various types of buildings. Cooling systems in connection with air conditioning systems are required by the ordinance to be properly installed and the ordinance requires various safeguards to reduce the hazard of fire. These are the only regulations which would tend to reduce the fire hazard in air conditioning systems.

G. A. Goodin, Chief, Muskogee, Okla.: We had one fire in an air conditioned one-story building, housing a cafe. The building had a four-foot cock loft, and the ceiling was covered with four inches of rock wool insulation. There were four revolving ventilators on the roof. The insulation kept the heat and fire from showing in the cafe, and the ventilators caused the draft. The result was that the fire had gained a big headway before it was discovered. The rock wool insulation absorbed the water and the weight of it caused the ceiling to fall, causing considerable damage to stock and fixtures.

We do not have any regulations governing installation.

Brooks McClure, Chief, Huntington, W. Va.: To date we have not had any fires directly in any air conditioning system, but about two years ago we had a fire that started in a heating system and followed the hot air pipes up to the second floor of the building. All ducts must now be of metal construction.

W. Q. Dowling, Chief, Jacksonville, Fla.: We have a large number of buildings which are air conditioned, but have not had a fire in any of them.

The Building Supervisor, in issuing a permit, requires that shutters be put in all ducts. These shutters are released by a fusible link.

All ducts are made of non-combustible material and we believe these shutters will considerably retard the fire, if not prevent it entirely.

Walter F. Israel, Chief, Detroit, Mich.: I do not recall any fires in Detroit in the past few years in which fire was actually carried to different portions of the building by way of air conditioning systems. However, in January, 1938, a smoke loss in excess of $136,000 was caused by a fire in an air conditioning system in one of our large department stores. The system was not in operation at the time and the fire apparently originated in dust and lint at one of the outlets in the basement and extended into the duct, igniting the filtering system and the resulting smoke penetrated throughout the building.

A new air conditioning and ventilating code is now being drafted in which regulations to reduce fire hazards will be incorporated. The Department of Buildings and Safety Engineering is charged with the enforcement of these regulations.

William J. Lutz, Chief, Wilmington, Del.: Section 505 of the Building Code of the City of Wilmington provides for artificial ventilation as follows:

"1. General.

"(a) When mechanical ventilation is required, or is permitted as an alternative, the system shall be designed and constructed in accordance with generally accepted good practice, to provide the necessary change of air, but not less than prescribed in this Section.

"(b) Except as otherwise specifically prescribed by law, or in duly promulgated rules, the recommendation of the American Society of Heating and Ventilating Engineers, which

HERE IS THE PROBLEM FOR THE NEXT ISSUE

During recent years have you had any outstanding case of delayed alarm resulting in a large fire or loss of life?

Briefly, what are the details, such as life or property loss, approximate period of delay, reason for delay, type of property damaged, etc.

have been established in cooperation with the U. S. Public Health Service and the U. S. Bureau of Mines, shall be deemed to be generally accepted good practice."

W. E. Jackson, Chief, El Paso, Tex.: The business to which you refer is in its infancy here. The city has appointed a thorough and competent Refrigeration and Cooling System Engineer to inspect all installations and to see that they are kept in a safe and sanitary condition.

We had the first reading of a very positive and technical ordinance, covering every detail in the construction and installation of all kinds of cooling systems. Penalties for violations are inserted and permits are required and many other features of importance which make up a very satisfactory document.

It is my opinion, that this system of control in the hands of a competent and aggressive inspector will solve the problem, from all angles.

Our ordinance will soon be passed and put into effect by the City Council.

* * *

Answers to Previous Questions

The following replies were received in answer to a previous question on the problems introduced for the volunteer department in sounding alarms, since the introduction of the dial telephone:

Hardin White, Chief, Altus, Okla.: We do not have the dial telephone in use in our city. We sound the fire alarm or siren from the fire alarm room just as we are leaving to call in our seven extra men who are call men.

Lewis K. Zirn, Chief, Coldwater, Mich.: Coldwater has a population of 8,000 and has four full time and twelve volunteer firemen. Alarms come in via the telephone operator system.

We have never had any experience with the dial system. Should it ever be introduced, I think a proper solution could be worked out by our department and the telephone company, which is always ready to cooperate with its subscribers.

Abner W. Hosteller, Chief, Citizens' Fire Company No. 1, Palmyra, Pa.: Our Borough formerly used a code siren (with transmitter located in telephone exchange room) and operated by persons employed in exchange, whether the call came from town or from a rural district. Early in 1939, our fire department was notified that about August of the same year the phones would be changed to the dial system and the former service of sounding alarms would be discontinued.

We had a one-story frame building located on the rear of our lot. This has been converted into a dwelling and the transmitter and a private telephone installed therein. We have arranged with a local family to occupy these quarters for the purpose of sounding alarms.

The fire department distributed cards throughout the district, giving the phone number to be called in the event of fire. Persons reporting a fire, call this phone number, giving location. The alarm is then sounded by the person receiving the call.

We have been using this method for the past year and find it very satisfactory.

R. George Woods, Chief, Englewood, Col.: As we have no dial system in operation, we have no difficulty in turning in fire alarms. When we get the fire alarm at the fire house, the operator will also get the alarm and start ringing for the firemen who have a phone.

Chester S. Conrad, Chief, Peotone, Ill.: It is usually the custom in smaller towns where the dial phone is installed, for the telephone company to dispense with the local operator and locate the exchange in some nearby larger city, leaving the small community without any operator to trace calls or to get any of the information usually necessary.

We have overcome most of the trouble caused through the installation in the following manner:

The Chief has a special phone installed at his place of business, another special phone at his home, and a third phone installed at a service station (24 hour service Sundays and holidays). These phones are special phones for incoming calls only, and will never be busy. They are all bridged together under Number 2121. They are equipped with special toned bells which makes them easily distinguished from the other phones. When a call is sent in, all three phones will ring at once, and in most every case (Sundays and holidays excepted), the call will be received by three parties. This makes it easy to verify location, etc.

Beside each of these phones, is a control button for the siren and as soon as a call is sent in, the siren is sounded from any one of the three places.

Altogether we pay for six private lines from the phone company, and as they keep all lines in repair, we figure it is cheaper to rent the lines than to have city owned lines, as the cost of moving is small.

We have found this set-up very fine and consider the cost to be very cheap for fire protection. We have found by experience that in every case where a fire was reported, the party received instant attention.

H. H. Kudlich, Chief, Palmerton, Pa.: We have the dial phone in operation. The operator sounds the alarm direct from the exchange. One must call the exchange to have the alarm sounded. From our experience, this method has been very satisfactory in our town. Incidentally, we have a very low fire loss record.

C. A. Wolverton, Chief, Port Angeles, Wash.: We still do not have dial phones. However, I believe the solution to this problem would be to have volunteer sleepers in the fire station at night with a coded siren or whistle that would code districts.

In this case a phone with a gong attachment would have to be installed in the station. The day calls could be handled by the phone operator, or if the station was located in the city hall, the clerk or other city official could cover fire calls.

The following replies were received in answer to a previous question on the drying of fire hose:

Emil A Johnson, Chief, Boulder, Colo.: We use a hose tower for drying hose, hanging the hose in the center of each length. After the hose is dry, it is rolled and put in a hose rack. This method has been found entirely satisfactory after being used for over twenty years.

Fred F. Knight, Chief, North Tonawanda, N. Y.: The City of North Tonawanda has always had a hose tower. There are six companies and all hose is kept in one place. Some departments use their tower for a drill tower too. I think this is the best way to dry hose.

H. J. Callahan, Chief, Fort Dodge, Ia.: We use sloping slatted racks, fifty feet in length, for both drying and storing hose. Steam pipes are run underneath these racks for use in cold weather. This method has been found very satisfactory.

Hose could be dried faster on these racks by the use of blowers or the so-called unit heaters.

Ernest Hobbs, Chief, Frankford, Ind.: We wash our hose and hang it in a drying tower. We find this very satisfactory and easy to handle.

Edward Lepage, Chief, Berlin, N. H.: Our hose is put through a washer and then hung in a sixty foot tower and left there to dry for five or six days. This I believe, is the best way to dry hose as it gives a better chance for the air to circulate inside the hose.

W. E. Crawford, Chief, Hoquiam, Wash.: We hang our hose in a tower for drying. It is hung over a rack rather than hung by either end.

E. L. Kieth, Chief, Corsicana, Tex.: We dry our hose outside on slotted racks which drains fifty-foot lengths of hose. In order to get more hose on the rack, we stand it on edge and zig-zag it to facilitate standing. We usually let the hose dry a few hours and then turn it over to allow the bottom edge to dry so that it will dry evenly. When it is wet weather, or cold, the same method is used on the floor of the truck room.

Pat Lowe, Chief, Denison, Tex.: We use a hose rack to dry our hose. The rack is higher in the center than at both ends and is fine for washing and drying the hose, as it can drain both ways. Two men can turn the hose easily.

Joseph Caulfield, Chief, Piqua, Ohio.: We use a tower to dry our hose. The hose is hung full length by the male end.

Celebrates Ninety-first Birthday

Lucien D. Hazard, former Chief of the Pittsfield, Mass., Fire Department, has observed his ninety-first birthday. Chief Hazard joined the Pittsfield Fire Department in 1863 as a call fireman and passed up through the ranks to the position of Chief in 1904. He retained that office until 1910.

Gunderson Named President

Chief M. F. Gunderson, Oelwein, Ia., was named President of the Iowa State Firemen's Association at the annual convention at Emmetsburg, Ia. Other officers named were: First Vice-President, Earl Byers, Belle Plaine; Second Vice-President, Don Driscoll, Corning; Third Vice-President, Lester Willey, Denison; Fourth Vice-President, E. E. McCallum, Eagle Grove; Fifth Vice-President, Carl Fuchs, Des Moines. The 1941 State Convention of the firemen's association will be held at Chariton.

FIRE MARSHAL S. C. GARRITY DEVELOPS PREPAREDNESS PROGRAM

Formulates Defense Methods and Tightens Up on Arson Activities

In the movement to prepare the fire service for war time problems, in the event of this country becoming involved in the world-wide conflict, no state official has been more active and more farsighted than Fire Marshal Steve Garrity, of Massachusetts. No official has the confidence of the Fire Chiefs to a greater degree than he, and this confidence, combined with his knowledge of the work falling within his jurisdiction, has resulted in strengthening of the fire defenses of the Commonwealth of Massachusetts to a marked degree.

Believing that our readers would be interested in reviewing the accomplishments of this friend of the fire service, we publish the following article.—EDITOR.

FIRE Marshals and other fire officials throughout the country can well look to Stephen C. Garrity, State Fire Marshal of Massachusetts for aid in formulating preparedness programs, because Fire Marshal Garrity has not only pioneered in the field of preparedness in fire prevention, but has cooperated one hundred per cent with fire officials in every movement which would increase the efficiency of their departments.

S. C. Garrity

During the New England floods of a few years ago, when the fire department members distinguished themselves by heroic service, Fire Marshal Garrity realized the need of a central bureau to furnish information concerning the fire department equipment that would be available in event of a disaster. Having launched this movement in 1938, Fire Marshal Garrity not only completed an extensive inventory of fire department equipment, but has maintained it up to date so that it is now proving of great value in preparedness. So complete is the fire department inventory, consisting of ninety-three different items, that it ranges from valuable fire boats to ordinary floor mops.

The inventory is not only complete and readily accessible, but it is also easy to operate. The facts are arranged in a book, a page for each item, each page containing a list of the 351 cities and towns. It is only necessary to turn to the page indicated by an index, and there will be found the number of articles which each city and town has available.

Inventory for Preparedness

By way of illustration, the book shows there are 107 aerial ladder trucks, 170 city service trucks, 697 cellar pipes, 3,080 salvage covers, 156 boats for rescue work, 316 miles of 2½-inch hose, 7,885 hand extinguishers, 109 life guns, 751 first aid kits, 255 ambulance services, and 1,292 gas masks. It may be interesting to note that there are still eighteen steam fire engines, eighty-three sleighs or pungs, 224 harnesses, but not a solitary horse. For preparedness purposes, the complete inventory has been broken down into sections according to its value in serving the army, navy or other governmental agencies.

Dynamite or other high explosives may be stored or used in Massachusetts under license of the local authorities and permit from the State Fire Marshal. Such storage must be in conformity to regulations promulgated by the Marshal. A year ago, Fire Marshal Garrity started a campaign to require strict compliance with all laws and regulations, and today is maintaining a strict control over the explosives situation. Several officers were detailed to make a special check, and as a result all explosives are now properly stored. Sellers and users must report monthly in detailed forms to the State Fire Marshal.

Storage of Explosives

There are 569 magazines being used in Massachusetts to store high explosives. These contain a total of 582,072 pounds of explosives. The Fire Marshal has devised a plan whereby, in event of emergency, all explosives can be quickly removed to selected central points and placed under constant guard. The Fire Marshal's records of the above storage are not available to the public, but are at the disposal of governmental authorities. This strict supervision over explosives is to prevent possible sabotage. Every Fire Chief is delegated to grant the permits for the State Fire Marshal so that all Chiefs will know the location of all explosives within their respective territories in the event of fire, or if there should be need to secure explosives quickly for governmental reasons.

State Fire Marshal Garrity has also inventoried the storage of gasoline and fuel oil, and has made strict regulations to protect such storage. He has also consolidated fire-fighting plans to protect the oil storage. This plan shows the location and amount of foam, foam powder, and foam generators available. A mutual aid system has also been perfected in the areas where there is a large concentration of oil storage.

Fire Marshal Garrity has also assisted manufacturing plants in improving their fire protection equipment and in formulating plans for greater security against fire. Inspectors of the Fire Marshal's office have been of great assistance to hundreds of firms throughout the Commonwealth. Automatic sprinkler systems have been added, watchman service increased, and scores of other improvements made through the intercession of the Fire Marshal.

While Fire Marshal Garrity and his officers have been extremely busy with all of the above outlined activities, they have not relaxed vigilance in the investigation of incendiary fires and prosecutions arising therefrom. Massachusetts has long been in the foreground in the apprehension and prosecution of arsonists. This work has been vigorously extended, as evidenced by the fact that during the past year there were 174 arrests and 168 convictions resulting from fires which were set.

The Fire Marshal's office also has regulations concerning garages, oil burners, inflammable liquid storage, dry cleaning establishments, fireworks, etc.

In addition to being known from coast to coast in fire department circles, Fire Marshal Garrity is also National Executive Committee Member of the American Legion for Massachusetts and enjoys a host of friends among the veterans.

Hazard Elimination Causes Fire

The Bagley Park grandstands, located just east of the city limits of Vancouver, Wash., burned to the ground recently with a loss estimated at $25,000. The stands were not covered by insurance.

The fire was caused by sparks from a fire started by the Deputy State Fire Warden, who was directing a crew burning grass to remove a fire hazard for the protection of crowds who used the stands. City trucks were called, but were stopped from laying hose because of a standing order against leaving the city limits. A union rule prevented two linemen from cutting wires in a cable carrying 2,300 volts, which endangered the crowd throughout the fire.

GEORGE A. NEEP.

Firemen Issued Special Car Plates

More than 7,500 pairs of bright red registration plates have been made at the State Prison of Rhode Island and are to be issued to the Volunteer Firemen of that state. Deputy Chief Arthur H. Woolhouse of the Norwood, R. I., Fire Department, the originator of the proposal, stated that the issuance of these plates has resulted in a reduction in the running time to alarms by fire companies. Through the use of these plates police can identify active firemen and allow them to pass through the fire lines.

Only active members are able to obtain these registration plates. The plates are good as long as the enamel on them lasts or until the men taking them leave the fire company. Through a system of assigned numbers for the firemen of each town, police of one town are able to spot firemen of other towns and keep them back with the spectators.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Discharge Problems

To the Editor:

What size tip would you use in each of the following cases:

(a) 500-gallon capacity gear pump with 400 feet of 2½-inch hose?

(b) 1000-gallon pump, 200 pounds engine pressure, 1000 feet of 2½-inch hose single line?

(c) 750-gallon pump capacity gear, two single lines of 2½-inch hose, distance 600 feet? G. A.

Answer: Using a 1⅜ inch nozzle on the line fed by the 500-gallon pump, the nozzle pressure would be 64.2 pounds.

This is secured as follows:

N. P. = E. P. ÷ (1.1 + .096 × 8)

E. P. is 120, and .096 is the factor "K" for 2½-inch hose and 1⅜-inch nozzle; 8 is the number of fifty-foot lengths in the 400-foot line.

Then N. P. = 120 ÷ (1.1 + .096 × 8)
= 120 ÷ 1.868
= 64.2 pounds

Discharge = $29.7 \times d \times d \times \sqrt{p}$
= $29.7 \times 1\frac{3}{8} \times 1\frac{3}{8} \times \sqrt{64.2}$
= 450 gpm approximately

Using a 1½-inch nozzle,

N.P. = 120 ÷ (1.1 + .135 × 8)
= 55 pounds nozzle pressure

Discharge = $29.7 \times 1.5 \times 1.5 \times \sqrt{55}$
= 496 gallons per minute

The engine could supply this latter line at 65 pounds nozzle pressure, for it would be discharging 496 gallons per minute at 120 pounds engine pressure. This is within the capability of the pump.

This latter line, with 1⅜ inch nozzle, would give the more effective stream of the two calculated above.

With reference to a 1,000-gallon pump, the problem states that there is a 1,000-gallon pump at 200 pounds engine pressure. It is assumed that this is a standard 1,000-gallon pumper which would give its full capacity at 120 pounds, half its capacity at 200 pounds, and one-third its capacity at 250 pounds.

Using a 1⅜ inch nozzle on the line, the nozzle pressure would solve out at 45 pounds and the discharge, 246 gallons per minute.

This is when the pump is operating at 200 pounds pressure.

Operating the pump at 250 pounds pressure, nozzle pressure on a 1¼-inch nozzle would be 41.1 pounds, and the discharge would be 296 gallons per minute.

The second line, employing a 1¼-inch nozzle would give a better stream at 41 pounds pressure than a 1⅜-inch nozzle at 45 pounds. Hence, a 1¼-inch nozzle should be employed. The discharge, 296 gallons per minute, is less than the discharge from the 1,000-gallon pumper, which is 333 gallons per minute.

The third problem deals with a 750-gallon pumper operating at capacity gear, which is 120 pounds engine pressure. Solving for nozzle pressure, using a 1⅜ inch nozzle, the answer is 53.3 pounds, and the discharge at this pressure is 410 gallons per minute approximately.

Using a 1½-inch nozzle, nozzle pressure solves out to be approximately 44 pounds. The discharge at this pressure is 442 gallons per minute.

Underwriters' rules for satisfactory fire streams state that where nozzles of 1⅜ to 1¼-inch are used, nozzle pressures should be 40 to 60 pounds; where nozzles are 1½-inch and larger, nozzle pressures should be from 60 to 90 pounds.

On the basis of these rules, the 1⅜ inch nozzle would give a better stream, for it would deliver a stream at a pressure of 53.3 pounds, whereas the 1½-inch nozzle would deliver at a pressure of 44 pounds approximately.

Pump Discharge

To the Editor:

If a pump is placed five feet above sea level, would it be possible to draft water out of a fifty-foot bridge caisson?

Would it be of any help to connect a wye to the discharge gate at the pump, run a line from the wye to the hydrant, using the hydrant pressure to assist or form a siphon at the pump?

Does air pressure increase below sea level? W. T.

Answer: It would be a physical impossibility for any pumper to lift water this height by suction. In fact, it is very unlikely that any pumper could raise water more than thirty feet in this manner.

While the atmospheric pressure would be a little more than 14.7 pounds per square inch at the bottom of the caisson, which is 50 feet deep, the additional air pressure would not materially affect the ability of the pumper to raise water.

Neither could the pump lift the water this height if the second line were connected to a hydrant and fed the pumper through a wye connection.

It might be possible to raise water this height by the use of a specially designed ejector. The pressure required at the pump to lift water in this manner would be determined largely by the design of the ejector.

Performance of Centrifugal Pump

To the Editor:

A centrifugal pump is operating at 600 pounds; the delivery based on that premise is 250 gallons. Four lengths of 2½-inch hose are stretched. Regardless of nozzle diameter, only 250 gallons can flow. Thus with a 250-gallon flow, the friction loss per 100 feet is, according to formula, 15 pounds. With only four lengths of hose stretched, there is 60 pounds friction loss. Where is the rest of the pressure that is developed at the pump? J. J. D.

Answer: The specifications state that the centrifugal pump, operating at 600 pounds pressure, delivers 250 gallons per minute. However, if you stretch four lengths of 2½-inch hose, you must put on a nozzle of small diameter so that the nozzle pressure plus the friction loss will give you 600 pounds at the discharge side of the engine. If a larger nozzle is used, then you would not be able to maintain 600 pounds delivered pressure, but you would get more than 250 gallons per minute.

If we want to get 250 gallons per minute, we would have to use a nozzle of .594 inch in diameter. The pressure at the nozzle would be 570 pounds and the friction loss would be 30 pounds for 200 feet (four lengths). The friction loss plus nozzle pressure would give you 600 pounds engine pressure.

Incidentally, this nozzle diameter is found by using the discharge formula and inserting the discharge figure in the formula as follows:

Discharge = $29.7 \times d^2 \times \sqrt{P}$
250 = $29.7 \times d^2 \times \sqrt{570}$
d^2 = 250 ÷ (29.7 × $\sqrt{570}$)
= 250 ÷ (29.7 × 23.88)
= 250 ÷ 709
= .3525
d = $\sqrt{.3525}$
= .594

A centrifugal pump is automatically flexible. As the discharge pressure is lowered, it delivers more water. Likewise, as the discharge pressure is increased by pumping or by using a smaller nozzle, the engine pressure is increased. But to get any particular engine pressure, we must have sufficient friction loss and nozzle pressure to build up this engine pressure. In so doing, we automatically limit the flow to what it should be at that pressure.

Fire Problems

To the Editor:

I would appreciate your answering the following questions:

1. Can an alcohol fire be extinguished readily with a foam extinguisher?

2. Should the handle of a fire axe be painted red?

3. When cutting flooring, roofing

or sheeting, should the cut be made straight across the grain, at a ninety degree angle to the grain, or at a sixty degree angle to the grain?

A. J. R.

Answer: A small alcohol fire can be extinguished by foam if a plentiful supply of foam is available. However, the foam dissolves or breaks down rapidly in alcohol, so that the application has to be at a fairly high rate. Ordinarily, foam extinguishers are not used on alcohol fires, because of the rapid destruction of the foam blanket.

Some fire departments paint the handles of the axes red, although this practice is not essential. The shape of the fire axe head is sufficiently distinctive to identify it as fire department property, and the painting of the handle does not materially lengthen the life of it.

When cutting flooring, roofing or sheeting, the cut should be made straight across the grain, if the grain is at right angles to the floor beam. Cutting out a square section of flooring, roofing or sheeting makes the job of repair far simpler.

Matter of Layout

To the Editor:

1, A 1,000 gallon pumper is connected to a low pressure hydrant with a 4½-inch suction. Pumps operating at 160 pounds. Two 2½-inch lines are stretched from discharge gates to high pressure hydrants 300 feet away. High pressure system is working at 125 pounds. How many gallons of water are being pumped into high pressure system.

2. Same layout as in question No. 1, using a 750 gallon pumper. High pressure oulets are 2½ inches in diameter.

W. H. N.

Answer: The method of solving this problem is to find what flow would be required through each of the two parallel lines in order to give a friction loss equal to the difference between the engine pressure and the pressure where the water enters the high pressure hydrant.

The hydrant is being operated at 125 pounds pressure and we require approximately ten pounds residual pressure in the lines entering the hydrant to provide the necessary flow into the high pressure hydrant. We thus have available for overcoming friction loss, 160 — 125 — 10, or 25 pounds.

This will be the friction loss in each of the two parallel 300 foot lines of 2½-inch hose.

The friction loss in 100 feet of 2½-inch hose, would then be 25 ÷ 3, or 8.333 pounds per hundred feet.

Now using the formula for finding friction loss in fire hose, we put the value 8.333 in the formula and solve for the flow.

The forumla is:

Friction loss per 100 feet of 2½-inch hose $= 2\times Q\times Q+Q$

$= 8.333 = 2Q^2+Q$

We must get the second side of the equation in the form of a perfect square so that we can extract the square root. This is done as follows:

First multiply both sides of the equation by 2:

$$16.666 = 4Q^2+2Q$$

Add .25 to each side of the equation, and we have:

$$16.916 = 4Q^2+2Q+.25$$

Extract the square root of each side of the equation:

$$4.11 = 2Q+.5$$

Subtract .5 from each side of the equation, and we have:

$$2Q = 3.61, \text{ or } Q = 1.805$$

As Q is the flow in hundreds of gallons per minute, the flow for each line is then 180.5, or in two lines, 361 gallons per minute.

A 750-gallon pumper, operating at 160 pounds pump pressure would give exactly the same result, for it is within the capacity of a 750-gallon pumper to supply 361 gallons at about 160 pounds pressure.

District Department Protects Town

Althouth Palmer, Mass., has no town Fire Department, it is divided up into fire districts, each of which has its own department. About two years ago, District No. 1 realized the need for new equipment. After nearly a year's work, $82,000 was appropriated to build a new fire station, to buy a complete new fire alarm system, and to purchase two new pieces of fire apparatus.

The new brick station was completed last year. Its apparatus room is capable of housing four pumpers and an aerial ladder truck. There are hose racks for 2,700 feet of hose, lockers for the men, storage lockers, battery chargers, one for each truck, tool and work bench, hose rack and facilities for drying salvage covers. A storage closet and toilet and shower room are also provided. The watch room is adjacent to the apparatus room and houses the register and transmitter. The fire alarm room is separate from the rest of the station. On the second floor of the fire station is a room furnished with necessary furniture, a completely equipped kitchen, three other rooms which may be used as bedrooms, and a wash and toilet room.

The new fire alarm system is one of Gamewell's latest. It is a modern three-fold system connected to forty-one boxes, all grounded.

Two pieces of apparatus, a 750-gallon pumper and a sixty-five foot aerial ladder truck, were purchased from Peter Pirsch and Sons. Both trucks passed the tests required of them by the New England Insurance Exchange.

Our fire fighting force provides for twenty-five men, all call men. The trucks are checked once a week with an elaborate check being made once a month. Our department is trained through the cooperation of the State Department of Education and in addition, men are detailed to the Zone School in Springfield, Mass. Within a short time, we begin training a Volunteer force in line with the Major Disaster Emergency for National Defense.

CHIEF V. M. FRENCH

Detector Reveals Fire in Walls

A heat detecting device recently developed has proven effective in determining whether fire is burning within the walls or ceilings. The machine which resembles a camera is expected to eliminate axe work in the future in ascertaining the path of the fire. It is equipped with a highly sensitive mechanism and operates in the manner of an electric eye.

When the eye of the machine is focused on the wall or ceiling, the operator determines whether or not fire is passing through that part of the building by a red light which flashes intermittently.

Old Steamer Wanted

An exhibit room has been set aside in the Museum of Science and Industry, Chicago, Ill., for historical fire fighting equipment. For the central feature, a display of a horse drawn steamer is desired of the type used before the advent of the motorized units.

Although there are a number of these old engines in existence throughout the country, the museum officials have been unable to locate one that is not in frequent use for parades and the like. The officials are not in a position to purchase any such engine, but wish that some community or individual will present such a machine to the museum, where it will be seen and enjoyed by several million people yearly. Anyone who would like to donate an old steamer to the museum may communicate with L. C. Fopeano, Curator, Department of Civil Engineering, Museum of Science and Industry, Chicago, Ill.

The Headquarters and Equipment of the Palmer, Mass., Fire District No. 1

KEROTEST *Presents a New* UP-TO THE MINUTE EMERGENCY SQUAD WAGON

Built by Kerotest on Dian... Chassis. Brilliant red with ch... fittings and gold leaf stripi...

Speed, safety, efficiency—watchwords of the modern fire-fighter—are the outstanding features of the new Kerotest EMERGENCY SQUAD WAGON. Complete down to the last detail, this new machine gives you every tool for emergency work.

The combined judgment of hundreds of fire chiefs throughout the country has guided Kerotest engineers in developing this machine, that so fully meets the requirements of Fire, Rescue and Salvage crews.

TEN HIGHLIGHTS of the Kerotest EMERGENCY SQUAD WAGON

- Built-in Air Compressor (Standard ONLY on Kerotest).
- Portable Emergency Steel Cutting Outfit.
- 1850 watt Electric Generating Plant—plenty of power to operate flood lights and power saw simultaneously.
- Powerful, 20 ton Hydraulic Jacks (especially valuable for Highway work).
- Power Saw for Heavy Timbers.
- Complete Hospitalization Outfit.
- Demolition Hammer for Concrete, Brick Walls, etc.
- Light, strong aluminum ladders.
- High Pressure Cellar Pump, 100 gal. per min. at 70 pounds pressure, for either ground or fire hydrant use.
- 110 gal. Water "Booster" Tank—Air-Pressure Operated.

All equipment is immediately accessible in plainly marked, water-proof compartments, fitted with large doors lined with sponge rubber to prevent rattling.

SALVAGE EQUIPMENT—Absolutely "tops" is the salvage equipment furnished with the Kerotest Emergency Squad Wagon—including highest grade light weight salvage covers, crowbars, axes, gas masks, Indian Fire Pump, Dugas Fire Extinguishers (unexcelled for gasoline and oil fires), Kerotest Ultralites, Asbestos Suit, complete set of small tools, etc.

RIVER-WORK ACCESSORIES—For river work, extra equipment is available, including 14 foot steel boat with trailer, Kapok life preservers, diving helmet and underwater light.

A MONEY SAVER—This fully-equipped emergency squad wagon is a time and money-saver for any Fire Department. Write today for full particulars.

KEROTEST KEROTEST MANUFA...

KEROTEST

ACCESSORY EQUIPMENT FOR FIRE DEPARTMENT USE

EMERGENCY CUTTING APPARATUS

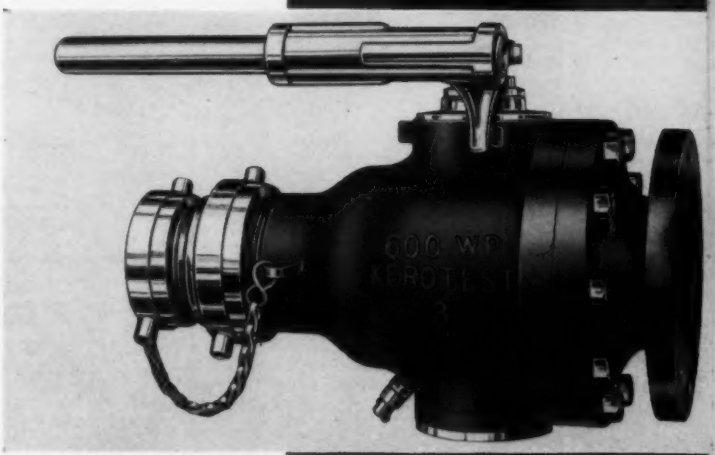
The KEROTEST Emergency Cutting equipment enables you to cut away steel barriers in a few minutes . . . to get to the source of a fire quickly . . . to make a rescue that by any other method of cutting steel would require hours of time. Enthusiastically approved by the country's leading Fire Chiefs.

The entire unit is self-contained, complete with pressure proved cylinders, regulators, hose and non-back-fire cutting torch all comfortably mounted on a special padded vest, always ready at an instant's notice.

The wearer's legs, arms and hands are entirely free at all times, as all parts of the Emergency Cutting Apparatus are strapped close to the body. Firemen can therefore climb ladders and work in very close quarters without the slightest inconvenience. Weighs only 43 pounds.

KEROSPHERE FIRE PUMPER DISCHARGE VALVE

Incorporating features that overcome many of the drawbacks found in conventional quarter-turn plug valves, the new KEROSPHERE Fire Pumper Discharge Valve represents modern construction. It can be opened and closed under high pressure just as easily as with no pressure. It can be throttled, and will not creep under pulsating pressures. Designed for working pressures up to 600 pounds per square inch (1200 lb. per sq. in. test pressure). Valve body is made of naval bronze, with operating parts of stainless steel. Sizes $2\frac{1}{2}$ and 3 inches.



KEROTEST PORTABLE ULTRALITE

A light beam of 85,000 candlepower is released when you pull the trigger of the Kerotest ULTRALITE, the light-weight, battery-operated portable light. Super-powered for every lighting emergency, the KEROTEST Portable Ultralite, with its handy pistol grip, represents the most powerful portable light ever designed. It is guaranteed to throw a bright beam of light a quarter of a mile, thus meeting the demand of modern fire departments for a powerful portable light.

Its pistol grip makes the ULTRALITE easy to point and hold on the objective with one hand; its trigger-finger switch is quick and convenient. Built in traditional Kerotest style, the ULTRALITE is sturdy, dependable, long-lived.

Among the Fire Fans

By Otis Smith

THE Phoenix Society, San Francisco, has been organized as a Disaster Unit for quite some time. The unit is under direction of Thomas Larke, Jr., who is also General Chairman of the San Francisco Disaster Relief Commission, American Red Cross. Members of the society act as a "roving unit," with no limitations as to territory.

Other fire fan clubs who are interested in broadening the scope of their activities by including a Disaster Unit, may obtain full information by writing to the Phoenix Society. Al Fryer is President, his address is 7 N. Front Street, San Francisco.

Another fire fan club of this type is the Boston Sparks Association. Several of their members have taken the various Red Cross courses of instruction. Vincent Bolger hadn't quite recovered from Boston's American Legion National Convention in time to send this column much news of Spark activities. For Red Cross information, write him at 100 Richmond Street, Dorchester, Mass.

Fans who desire statistics on Baltimore's latest (at this date) big fire may write to Otis Smith, 319 Gwynn Ave., Baltimore. He has the time sheet and apparatus movements for the fifteen-alarm fire at the Crown Cork and Seal Company, and will be glad to provide fans with a copy. This fire said to be biggest since 1904, called out fifty-seven of ninety-five Baltimore fire companies. The resultant scramble to cover the city with the remaining companies called for smooth work on the part of the dispatcher.

Thanks to George W. Smith, FDNY, for the inquiry on the Maltese Cross. Many sources have written to this column on the subject. It has been covered in previous issues, as far as the existing information would permit. This column still does not know when it was introduced into the American fire service.

Note to Baltimore firemen and fans . . . this writer did not say that he was opposed to the idea of a civilian coffee service in Baltimore. The writer agrees with those who say that it would be a good thing for the relief of the firemen this winter. If ever any reputable sources contemplate the organization of a coffee service, this writer would like to help out to the limit of his ability. Those who read the last issue evidently gained the wrong impression on this subject. This writer merely criticized the methods of a person, or persons, who were talking of starting such a service. Their methods seemed so wrong that this column felt it imperative to let it be known that it was not connected with the proposed movement.

Gordon Mullins attended the American Legion Convention at Boston last month. We understand that he is traveling west and will see Detroit and Chicago. He also visited the Vermont Fire Chiefs' Association, Barre, Vt., Connecticut State Association, at Danbury, and the 100th Anniversary of the Washington Engine Company, Peekskill, N. Y., where 5,000 firemen paraded.

The writer enjoyed a visit recently with Edward Sprangers, Philadelphia. After looking at Ed's. swell collection of fire department pictures, we turned our attention to the Philadelphia Fire Department. The writer was just one jump ahead of three fires, and so failed to see the Philadelphia crews in action. Points visited included Engine 28, and also the unusual station on Roosevelt Blvd. This station, Eng. 70, was built by a nearby mail order house and is very well designed and built. Ed is always glad to see visiting buffs, who may contact him at his home, 2228 W. Oakdale Street, Philadelphia.

Samuel R. Keyes is now living at 80-15 Grenfell Ave., Kew Gardens, Long Island, N. Y. . . . Don Ederr, 1617 Moreland Ave., Baltimore, Md., is willing to trade fire pictures. This means actual photos, not clippings . . . fire fans interested in first-aid may find it worthwhile to contact John Epp, 24 Link Ave., Halethorpe P. O., Md. John handles the night ambulance business for the vol. fire department of Arbutus, Baltimore Co., Md.

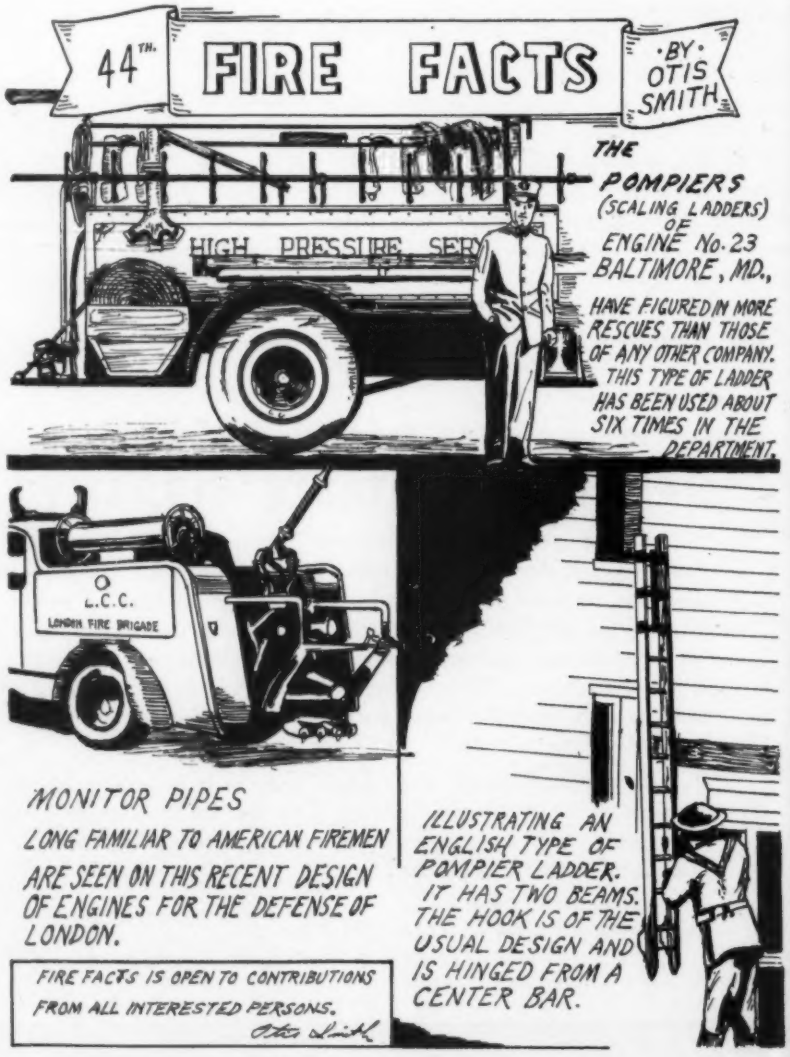
Windsor Locks Department Observes Anniversary

The Windsor Locks, Conn., Fire Department observed the fiftieth Anniversary of its organization on July 13, 1940. A parade was held in which a large number of fire companies from surrounding towns took part. The parade was followed by various hose laying contests. Prizes were given on various parade points.

M. W. LAWTON

Summit Levies Tax to Purchase Truck

At a recent election held in Summit, Ill., electors voted a three to one majority in favor of a plan to levy a two-mill tax for the purpose of purchasing an additional piece of fire apparatus. This new truck will be equipped with pump, booster tank, ladders and other accessories to supplement the work of the pumper now in service.


44TH
FIRE FACTS
·BY· OTIS SMITH
HIGH PRESSURE SER
THE POMPIERS (SCALING LADDERS) OF ENGINE No. 23 BALTIMORE, MD., HAVE FIGURED IN MORE RESCUES THAN THOSE OF ANY OTHER COMPANY. THIS TYPE OF LADDER HAS BEEN USED ABOUT SIX TIMES IN THE DEPARTMENT.
L.C.C.
LONDON FIRE BRIGADE
MONITOR PIPES LONG FAMILIAR TO AMERICAN FIREMEN ARE SEEN ON THIS RECENT DESIGN OF ENGINES FOR THE DEFENSE OF LONDON.
ILLUSTRATING AN ENGLISH TYPE OF POMPIER LADDER. IT HAS TWO BEAMS. THE HOOK IS OF THE USUAL DESIGN AND IS HINGED FROM A CENTER BAR.
FIRE FACTS IS OPEN TO CONTRIBUTIONS FROM ALL INTERESTED PERSONS.
Otis Smith

Eleven Wild Animals Die at California Lion Farm Fire

In the fire which caused $100,000 damage to Goebel's Lion Farm at Thousand Oaks, Cal., eleven wild animals were burned to death in their cages. These included eight tigers. Several hundred other animals were out of danger in their pens but were greatly frightened by the smoke and flames. Here is a charred section of the farm, where one of the elephants died.

Malden Warehouse Destroyed

A four-alarm fire, which swept through a storehouse filled with furniture and household goods, was one of the worst in Malden, Mass., in a decade. Fire was discovered by two passersby, and by the time the firemen arrived, the whole first floor was a mass of flames. Two more alarms were turned in, and on the fourth alarm, aid was summoned from Everett, Melrose, Medford and Revere, all in Massachusetts.

Flames swept from the lower floors to the roof causing the roof to cave in. Later both the side walls gave way, crashing in a cloud of sparks and debris. Streams were played from adjoining buildings and rooftops, but after four hours of fighting, fire officials said that the contents of the building, as well as the structure itself, were destroyed, the total loss being put at about $100,000.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of September, 1940. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending September 30	Loss in Thousands of Dollars
St. Maries, Idaho—Yards of Rogers Lumber Co. damaged	85
Reading, Pa.—Six buildings of Allegheny Chemical Co., destroyed	85
Montreal, Que.—Cleaning and dyeing plant.	70
Sacramento, Cal.—State Box Factory, destroyed	140
Hudson, Ohio—Five stores in Campbell block, destroyed	50
McComb, Miss.—Downtown business building, destroyed	80
Clyde, N. Y.—Refining plant of Charles Noble vinegar works, destroyed	50
Norwich, Va.—Planing mill of Harris Hardwood Lumber Co., destroyed	75
Pomona, Cal.—Packing plant of American Fruit Growers Assoc., destroyed	50
Billings, Mont.—Northern Hotel, destroyed	170
Christmas Cove, Me.—Holly Inn	80
Portland, Ore.—Warehouses and offices of Salem Navigation Co.	200
San Angelo, Tex.—Holcome-Blanton printing establishment, damaged	50
Fort Bragg, Cal.—Business block, destroyed.	50
Waycross, Ga.—Southern business block, destroyed	225
Baltimore, Md.—Plant of Crown Cork and Seal Co., destroyed	500
Dallas, Tex.—Dallas Rebel Baseball Stadium.	50
Willimantic, Conn.—Yard of Willimantic Coal and Lumber Co., destroyed	80
Worcester, Mass.—Plant and storage of St. Pierre Chain Corp., destroyed	50
Wilmington, N. C.—Two hotels, amusement and business area at Carolina Beach	900
Fullerton, Cal.—Mahan Furniture Co. store.	175
Colusa, Cal.—Masonic Temple and two stores	80
Wabash, Ind.—Union Rock Wool Corp. plant	50
Soap Lake, Wash.—Apple warehouse	50
Plaquemine, La.—Iberville Manufacturing Co. mill building	70
Blossom, Tex.—Five business buildings, destroyed	50
Catasauqua, Pa.—Lincoln School building, damaged	50
Los Angeles, Cal.—Progress Upholstery Co. factory	50
New Orleans, La.—Laundry supply plant, damaged	70
Brownsville, Pa.—Business building, destroyed	50
Clairton, Pa.—Two buildings of Pennsylvania Ind. Chem. Corp., destroyed	50
Newton, Ia.—Advertising Novelty Co. paint and process plant	50
Attleboro, Mass.—Business building, damaged	50
Brookville, L. I.—Residence, damaged	50
Pine Bluff, Ark.—Planters Cotton Oil Co. mill, damaged	50
Lakeland, Fla.—Citrus packing plant, destroyed	50
Malden, Mass.—Malden storage warehouse, destroyed	100

Two Killed in Plant Blast

A "flash" fire, caused by an explosion, roared through the upper floors of the five-story plant of the Advance Cabinet Company, manufacturers of radio cabinets, at 2141 Iowa Street, Chicago, and took the lives of two workmen before firemen, under the personal direction of Fire Commissioner Michael J. Corrigan and First Deputy Chief Fire Marshal Anthony J. Mullaney could bring it under control.

A still alarm shortly before noon on August 9 was followed by Box 554 a minute later. Within twenty-one minutes the 2nd, 3rd, 4th and 5th alarms and a special call for five engines had been sounded. Twenty-seven pumpers, three trucks, three squads, two water towers, three high pressure wagons and two light wagons responded to the multiple alarms.

The fire, which caused $50,000 damage, started when a ventilating fan

Fire Follows Flood in North Wilkesboro, N. C.

Fire added to the destruction caused by the flood waters of the Yardin River when flames swept through the plant of the Home Chair Company in North Wilkesboro, N. C. Torrential rains and winds of hurricane force greatly handicapped efforts of the firemen.

motor in the finishing and lacquering room on the fourth floor short circuited, igniting fumes in the room. An explosion followed. A foreman in the room, Joseph Roske, was rescued by a fellow employee who carried him to a window where firemen aided both to the ground. The two who were killed were found in the lacquering room.

The fire was soon brought under control and the box was struck out by Chief Fire Alarm Operator John T. Gegan at 1:02 p. m.

BOB GREENOCK.

Volunteers Make Good Stop

In Cornwall, N. Y., recently, a church steeple caught fire at about two a.m. Two volunteer fire companies responded and had the blaze extinguished

Courtesy of Newburgh News

Cornwall Church Steeple Fire at its Height

in two hours. The loss was estimated at about $7,500. Firemen made an exceptional stop as the fire was confined to the tower and a small part of the roof.

T. G. STILLMAN.

An Old Enemy Strikes Back

Fire, the enemy of mankind, which Chief McCurty of the Augusta, Me., Fire Department has fought so many times, struck back at him recently when smoke began to issue from underneath the dashboard of his car.

Two fire extinguishers were removed from Timothy Stillman's car, but were not used on the fire since no blaze occurred. This was due to the quick breaking of the wires by one of the occupants. This person was treated for burns sustained while disconnecting the wires.

T. G. STILLMAN.

Sierra Madre Has Record Low Loss

Sierra Madre, Cal., is a city of approximately 5,000 people. In 1920, its volunteer fire department was first organized with twenty members but no equipment. In 1921 a pumper was bought, and a few years later, two trucks were built locally. All three trucks are still in active service and are serving the community well.

The city of Sierra Madre allots $150 per month toward the volunteer department, which is divided among the members to pay their dues and insurance premiums. The members also receive four dollars for each call answered between the hours of 9 p.m. and 6 a.m.

Fines may be assessed members for arriving late at drills, meetings, or for being absent, or for not answering a fire call. In general the Chief has the power to fine members for lack of conformity to rules and regulations included in the by-laws.

The only officers that are paid by the fire department from its own funds are the Secretary, who is paid five dollars per month, and a publicity "agent," who also receives five dollars per month. This money is drawn from the general fund, which is an accumulation of the dues, fines, and at times, donations received from friends of the department. The publicity agent furnishes news to the weekly paper pertaining to functions and activities of the fire department. An attempt is made to keep the public "fire-minded" by having published many don'ts about fire.

Cooperation between the police and fire departments is very close. All of the police of the city are firemen. Some of the police salaries are paid from the fire department budget. Members of both departments are in the same building at all hours. Due to this arrangement, drivers for the trucks are always available when the fire call is received. The call is received at the station by a police officer who repeats the number to the telephone operator. She, in turn, is instructed to sound the siren atop the city hall. On hearing the siren, firemen from all sections of the city can receive the address of the fire over the 'phone. They can use their own cars to get to the fire. The police officer at the station receiving the alarm is usually the driver of one of the trucks. Despite the close relationship that exists between the two departments, the firemen are not required to accept the police as members of their own organization unless it is their desire to do so.

Much credit is due Chief W. D. Richards for the success of the fire department. Under his direction, the department kept the fire loss down to a total of $73.60 this year, representing a per capita loss of one and one half cents.

JAMES C. HEASLEY.

Meers is Veteran Texas Chief

Chief Jim Meers of the Waco, Tex., Fire Department, the oldest Chief in Texas, claims that he would do it all over again, referring to his career as a fire fighter. In 1893 he quit school and fibbed about his age to become a volunteer fireman. Three years later he became a paid fireman for the city of

Chief Jim Meers

Waco, and in 1917, he was made Chief of the department.

Chief Meers, who is now sixty-three years old, has had only one accident in his forty-four years as a fireman in Waco. One of his most interesting recollections of fires dates back to 1932 which involved a church fire. The fire was thought to be out, but instead, it burst out across a narrow street enveloping the town's best pumper. Although the truck was saved, the church burned down.

Schenectady Has Low Loss

During the first eight months of this year, there has been a fifty-five per cent reduction in fire losses over the same period last year at Schenectady, N. Y. Up to Sept. 1, the fire losses amounted to $32,378, as compared to $72,775 in the corresponding period last year. This year to date there have been 330 fires as against 364 in the same period last year.

The cause of the greatest number of fires was careless smoking, with range and fuel oil burners being second. Other causes of numerous fires included burning soot, matches, and overheated stoves.

A reduction in fire loss in Schenectady is not new for reductions have been accomplished each year since Chief James J. Higgins became head of the fire department. Factors affecting the reduction have been the increased efficiency of the department, the heightened morale of the department, and the better training received by the men.

Signal Association To Meet

Municipal signal men superintending and operating municipal communication services throughout the United States and Canada, affiliated with the International Municipal Signal Association, will honor George P. Allen by holding their forty-fifth annual convention in his city, Jacksonville, Fla., Oct. 14-17. G. P. Allen is the retired chief of the Jacksonville Signal Bureau. A number of technical papers have been planned for the meeting.

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Answers to these questions will appear in the November issue of this journal.

Question 1. Which are more troublesome at a fire; vertical or horizontal ducts in a building

Question 2. Why are attic spaces troublesome in a frame dwelling fire?

Question 3. Does the frame dwelling fire present a severe life hazard?

Question 4. At a fire in two-story frame dwelling where blaze has originated in basement, to what point is first line usually stretched?

Question 5. Where is second line usually laid?

Question 6. What is the first step in overhauling after a frame dwelling fire?

Question 7. How may fire travel concealed over the width of the building?

Question 8. Where mattresses have been partly burned, is it good practice to drench them with water in the building to kill any concealed fire?

Question 9. Should small streams be used to wet down small burned articles such as rags, bed clothing and garments?

Question 10. What attention should be given to window and door frames in overhauling?

Question 11. Why is life usually lost on the top floor of large frame dwellings when such buildings are involved by fire at night?

Question 12. In rescue operations at a large frame dwelling involved by fire, are ladders usually placed first at the windward or leeward side?

Question 13. If, when about to search a building on fire for anyone who might be left therein, you are advised by a bystander that everyone is out, what would you do?

Question 14. Where a large frame dwelling is afire in a thickly settled neighborhood and the fire has gone to the roof, what big problem is presented?

Question 15. What chief fire fighting problem does the film exchange present.

Question 16. Are film exchanges usually found in tall or low buildings?

Question 17. What danger to men may be looked for at such fires?

Question 18. Can celluloid film decompose without burning?

Question 19. What is the most effective extinguishing agent for celluloid film fires?

Question 20. State three materials employed in furniture manufacturing which contribute largely to the intensity of fires in such establishments.

Question 21. Two lines of 2½-inch hose are stretched from hydrants to a two-way siamese connection from which is stretched 100 feet of 2½-inch hose up a ladder to the fourth floor of a building. The parallel lines are 600 and 400 feet respectively. A 1¼-inch nozzle is used. Nozzle pressure is 40 pounds. What is hydrant pressure?

Question 22. Where a serious accident occurs to a person at a fire, what is the first thing that should be done?

Question 23. How can bleeding from severed artery be distinguished from that from a vein?

Question 24. If bleeding is severe (from artery or vein) how should it be checked?

Question 25. State one method of stopping bleeding from the nose.

Question 26. What is the function of iodine when used on a wound?

Question 27. What precautions should be taken before touching a wound?

Question 28. If a wound is covered with grease, soot or dirt, how may it be cleaned?

Question 29. When should adhesive plaster be used in treating a wound?

Question 30. Should a wound be bandaged tightly and, if so, when?

Question 31. When removing a splinter or other object, imbedded in the flesh, with a penknife, what precautions should be taken?

Question 32. Should discharge valves on a pumper be opened quickly or slowly, and why?

Question 33. Should discharge valves be closed quickly or slowly, and if so, why?

Question 34. If pump is permitted to churn at high pressure for some time, what effect has it on the water therein?

Question 35. What effect will an air leak in suction hose have when engine is drafting water?

Question 36. Should a pumper ever be permitted to draw a vacuum?

Question 37. When an engine is pumping, should the hood be raised, and if so, why?

Question 38. When should hood be kept down when pump is in operation.

Question 39. What was the first type of pump used for fire service?

Question 40. What is another name for brimstone?

Question 41. In what three manufacturing processes is it largely employed?

Question 42. How is sulphuric acid usually shipped?

Question 43. Will fuming sulphuric acid ignite combustible materials on contact?

Question 44. Why is potassium peroxide dangerous under fire conditions?

Question 45. What three types of oil are commonly encountered?

Question 46. Are any of the vegetable or animal oils volatile?

Question 47. Do mineral oils induce spontaneous ignition?

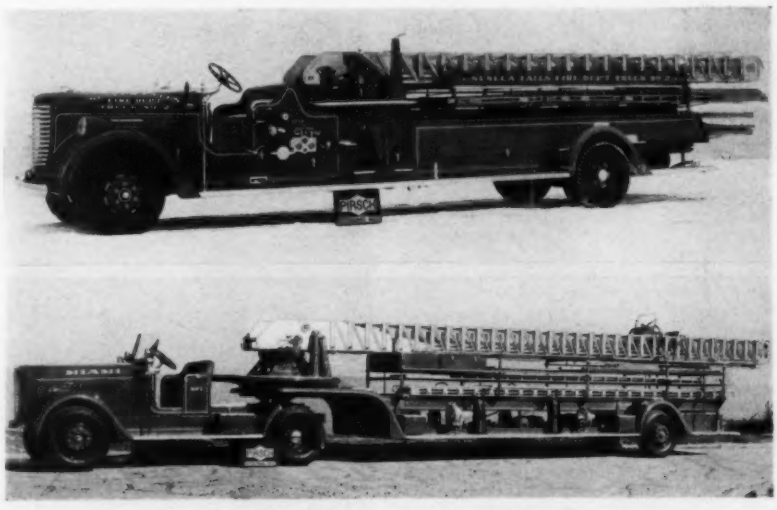
Question 48. Do vegetable or animal oil induce spontaneous ignition?

Question 49. Name four commonly encountered mineral oils?

Children Taught Fire Prevention

Chief D. J. Allen, Cottage Grove, Ore., has found that by making contact with the schools, by giving the children a chance to see the fire department's quarters, and by permitting them to observe how the firemen live, a great deal of interest is created in fire prevention work and the fire service.

Firemen have been calling at each of the class rooms of the two grade schools in Cottage Grove to make the children conscious of the fact that it is better to prevent fire than to have the fire department put it out. They were instructed in the method of calling the fire department in case of fire. Each child was appointed a deputy fire marshal and sent to inspect his or her home from top to bottom. They reported the conditions they found at the fire house.



Pirsch Aerials for Seneca Falls and Miami

Upper: The Pirsch intermediate aerial ladder truck, with a 600-gal. pump, recently delivered to the Seneca Falls, N. Y., Fire Department. Lower: The 100-foot Pirsch hydro-mechanical aerial ladder delivered to the city of Miami, Fla. This truck is equipped with the Pirsch Patented hydro-mechanical Hoist, and the Pirsch aluminum alloy aerial ladder. It is equipped with regulation ground ladders.

CONNECTICUT CHIEFS' PLAN CONVENES AT MILFORD, CONN.

Gov. Baldwin Emphasizes Part Emergency Plan May Play in Present War Industries Program—Officers Elected

By Thomas F. Magner

FIRE COMMISSIONER WILLIAM H. DEGNAN of Derby, Conn., was elected first permanent President of the Connecticut Fire Chiefs' Emergency Plan at the first convention of the new organization held on Saturday, September 14, in the Town Hall Auditorium, Milford. During the past year, President-Elect Degnan had served as temporary chairman of the new association and his election came following nomination by A. Miles Nettleton of the Arctic Engine Company, Milford.

Elected Officers

Other officers named were: Hubert M. Higgs, Ansonia, Recording Secretary; John H. Moehring, Stamford, Financial Secretary; Commissioner Leslie H. Hale, Newington, Treasurer. The following were elected Vice-Presidents to represent each county in the Plan: Tolland and Windham County, Chief Richard E. Wright, North Windham; Middlesex County, Chief Harry Ryan, Durham; Hartford County, Chief Thomas H. Donnelly, West Hartford; Fairfield County, Chief Thomas J. Carroll, Fairfield; New London County, Chief Frank A. Babbett, Mystic.

Nearly 150 delegates and guests were welcomed at the session opened by Selectman Robert Dixon and Fire Chief Lewis F. Stowe of Milford. Preceding the election of officers, a constitution and by-laws were adopted after a lengthy discussion over the manner of electing Vice-Presidents. It was decided that each county would be entitled to a Vice-President except the one represented by the President, and that the President and Vice-Presidents should comprise the Executive Committee.

In the evening, a banquet was held at the Seven Gables Inn, Milford, with Asst. Chief Francis O. Spaine of New Haven as master of ceremonies. Chief Spaine has been one of the ardent workers in the New Haven County Plan since its inception some years ago. Among the speakers were Governor Raymond E. Baldwin of Connecticut; Deputy Chief Waldron of New York City, and Chief Arthur Bell, Jersey City, N. J., Chief Instructor of the Fire Departments of Nassau County; Fire Commissioner William M. O'Hara and Chief Lewis M. Stowe.

Emergency Plan Stressed

Governor Baldwin in his remarks stressed the important part the Emergency Plan may play in the National Defense Program through the protection of the state's vital industries, utilities and transportation systems from the "insidious attacks of saboteurs." He urged the fire department heads to be on the lookout for any activity of a suspicious nature in their communities and to report anything of that kind to police authorities. He also urged that the new organization cooperate with the State Defense Council and recommended that a member of the Plan be included in local defense councils in all communities where they are being established.

The Connecticut Fire Chiefs' Emergency Plan, which includes officers of volunteer fire companies as well as paid department heads, is an outgrowth of the county fire chiefs' plans, which were organized some time ago in all sections of Connecticut, to provide assistance from other towns when an unusual blaze confronted and threatened to overcome the department in any one community. The state Plan is designed to coordinate the efforts of firemen in this manner over a state-wide area.

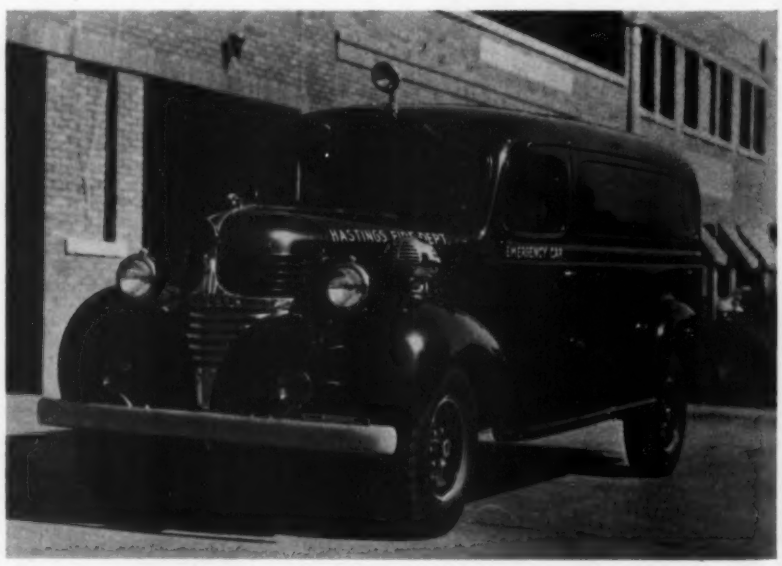
The 1941 convention will be held at Derby on the second Saturday following Labor Day. The by-laws provide that the incoming President be given the choice of selecting the convention town or city.

Emergency Truck for Hastings, Neb.

In Hastings, Neb., a new emergency truck has been placed in service which will respond to all alarms and all emergency calls. Practically all of the equipment which is carried on the new truck was in service prior to its purchase. In the past, the equipment was carried on three trucks which necessitated the use of three units when some of the equipment was needed. With all this equipment on one truck, unnecessary runs of regular trucks will be eliminated.

A list of the equipment carried on the truck is as follows: Smoke ejector, salvage covers, squeegees, brooms, mops, mop pails, trash carrier, mop wringer, wool roofing, bundle lathe, box nails, salvage cover tongs, salvage cover hooks. H and H Inhalator, stretchers, set splints, first aid kit, tannic acid spray kit, blankets, hot water bottles, oxygen masks, canister "All Service" masks, eight-foot pole ladder, scoops, short pikes, plaster hook, sledge, 300 feet of ⅝-inch rope, a 1,250-watt portable generator, 300-watt floodlight, 500 feet of cable, wire cutters, sprinkler stops, 1/5-gallon water pump, 2½-gallon foam extinguisher, a CTC extinguisher and some small tools. We plan to place a booster pump on this truck in the near future.

Chief R. J. VAN FLEET,
Hastings, Neb.



The New Emergency Truck in Service in Hastings, Neb.

New York Apparatus Chart

A chart of fire apparatus in the New York Fire Department has recently been issued by Wm. H. Wallace, 198 Linden Street, Rockville Centre, N. Y. It is 17x22 inches in size and includes the following information: Company number, battalion division, address; make of apparatus, year of construction, capacity of engine; make and year of hose wagon; make, year and height of truck; make and year of tractor. This information is given on every piece of apparatus in the New York department. Copies of the chart may be secured from Mr. Wallace, at fifty cents each.

Bennett Appointed Fire Chief

Maxie G. Bennett has been appointed Chief of the Orlando, Fla., Fire Department to take the place of the late Chief Gideon Dean who died at the recent I. A. F. C. in Spokane, Wash.

Barton Front Mounted AMERICAN-MARSH PUMPS Barton American Midship

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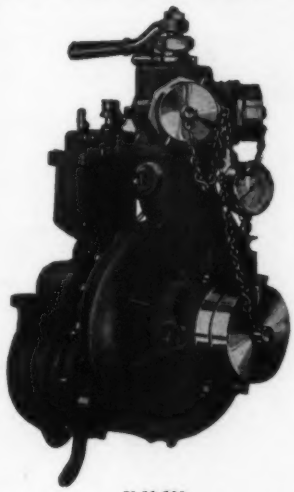

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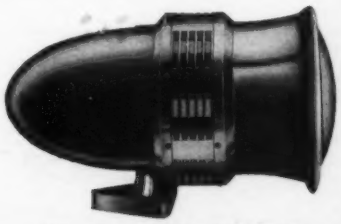
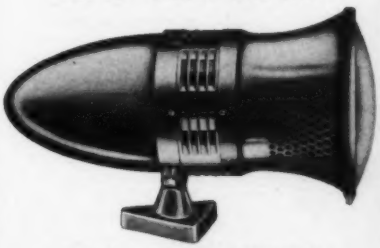


NO. **30** SENIOR SIRENLITE



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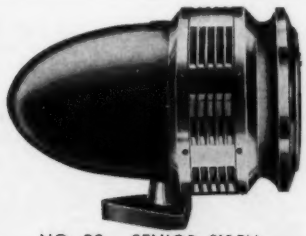

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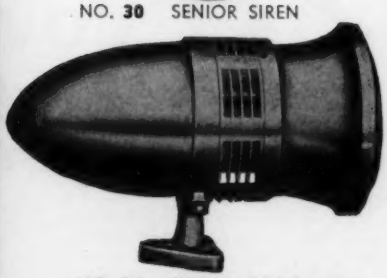

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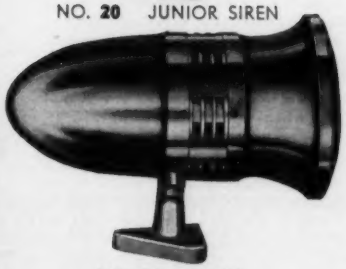

NO. **10** SIREN

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Fig. 946—Fog Tip

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Fig. 934—Single Hydrant Gate Valve

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Fig. 930—Junior Type Roto-Rays

Fig. 937 Heavy Duty Exhaust Whistle

Fig. 900—2½" Shut-Off Nozzle

Fig. 950—Moto-Ray

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FIRST LARGE FIRE OCCURS IN GOLDEN GATE EXPOSITION

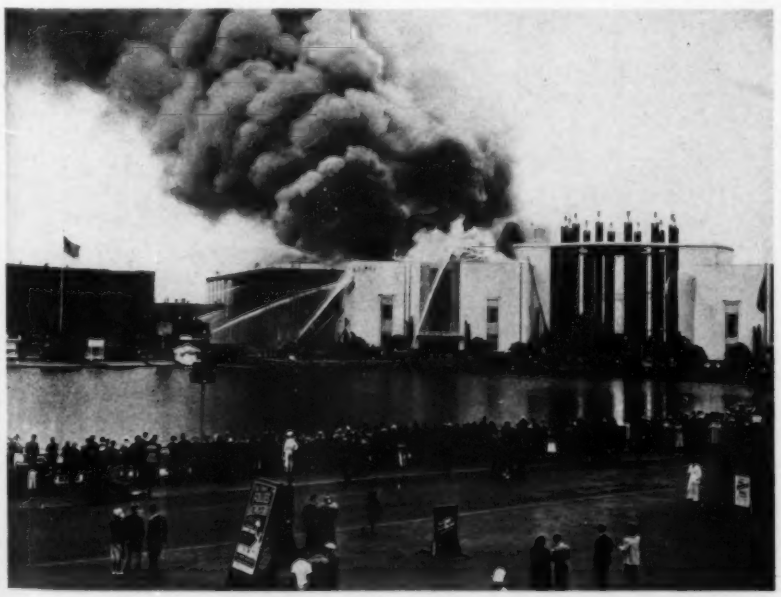
Largest Mobilization of San Francisco Firemen Since 1906 Fire, Battle $100,000 Exposition Blaze

By Charles Geiger

THOUSANDS of residents and visitors of San Francisco, Cal., were spectators of the spectacular fire which destroyed the California Building at the Golden Gate Exposition on Treasure Island on the morning of August 24. The San Francisco building and millions of dollars worth of other buildings and property on the exposition grounds were endangered by this fire.

The blaze apparently started in the east section of the building. It spread quickly up the east wall to the roof, touching off the automatic fire alarms of the ADT Company. About the same time, one of the Island guards saw smoke pouring from a rear window and turned in an alarm. This brought both of the Treasure Island fire companies to the scene. A few minutes after the first alarm, it was evident that most, if not all, of the California building was doomed. Observers gave the adjacent San Francisco building only a fifty-fifty chance of escaping destruction.

Shortly after the first alarm was answered, a second, third, fourth, and then a general alarm were turned in. This resulted in the greatest mobilization of fire fighting forces since 1906. Fifty-two pieces of San Francisco apparatus were rushed across the San Francisco-Oakland Bay Bridge to join the Treasure Island apparatus in their fight. Three fireboats were also large contributing factors to the final extinguishment of the blaze. When the island's fresh water supply for the high pressure fire fighting pipe network was seriously depleted, one of San Francisco's fireboats pumped thousands of gallons of bay water per minute into the pressure pipe line. Another fireboat supplied ten 3½-inch lines at the rate of 12,000 gallons of bay water per minute. The Standard Oil Company's fireboat also responded and aided in the fire fighting.



The California Building As It Was Being Destroyed by Fire

The California Building, like virtually every other exhibit building on the island was constructed of wood, plywood, tar paper and other flammable materials. The pitch coated tar paper on the roof burned rapidly with flames leaping an estimated fifty feet in the air. Streams of water had to be played on adjacent and nearby buildings as the heat from the wind-fanned flames and falling embers threatened to set them ablaze.

Many priceless historic documents, paintings and furnishings were saved by the quick work of U. S. soldiers, navy men, coast guardsmen, police and island guards. As the edges of the San Francisco building began to smoulder, sailors, soldiers, and others began to remove the contents on exhibition in that building.

Incidents Following a Test for a Gas Pipe Leak

Left: One of the fifty holes that were drilled along the line of the distribution pipe. These holes spouted water from a leaky water pipe. Middle: Water is seen spouting at the point where one of the holes was drilled. Right: The corroded and leaky gas pipe uncovered for making repairs.

Many valuable early California relics of the '49 days, including the transcontinental railroad gold spike, were locked in a safe with a time-lock which was scheduled to open some time after noon. A locksmith was hastily summoned.

Investigators suspected that the origin of the blaze was a broken natural gas pipe after statements had been made by the guards to the effect that they had heard explosions. This is the most logical theory in view of the fact that fire and explosion hazards have existed before and since the opening of the exposition, resulting from the island's natural natural gas distribution pipe line. Tests conducted on the pipe line before the exposition opened revealed the fire and explosion hazards caused by the highly corrosive soil damaging the pipe line to such an extent that gas escaped. Five miles of pipe were replaced with unwrapped pipe having an expected average life in the corrosive soil of fourteen months. All of this pipe has been buried in the highly corrosive soil of Treasure Island for more than twenty-two months.

A short time ago, the odor of natural gas was detected on the Island. Fifty or more holes were drilled over and along the gas distribution pipe line, and samples of the atmosphere were taken from each of the holes to be tested. These tests enabled the source of the escaping gas to be located without tearing up many lengths of the buried pipe. Following the locating of the source of the underground gas leaks, one of the fifty holes began spouting water. In-

This Pipe Was Found to Be Unfit for Natural Gas Distribution
Before the exposition opened this broken pipe was discarded following tests that were conducted on the pipe line to learn of its condition.

vestigation revealed the fact that this particular hole drilled into the pavement had penetrated an underground main. Three of the accompanying pictures show the underground surge of water, the corroded condition of the gas pipe, and one of the fifty holes that were drilled in conducting the gas test.

It was agreed among many authorities that the gas distribution pipe should be replaced by new pipe, and that all gas distribution pipe should be removed entirely from under wooden floors of all exhibit housings. This latter step, if taken, would remove the possibility of gas accumulating in pockets under the wooden floors causing explosion hazards.

Oklahoma City Has Defense Unit

A unit was recently organized in Oklahoma City, Okla., known as the "Emergency Defense Battalion of Oklahoma City," for the purpose of aiding designated city authorities in the protection of persons and property in time of emergency, and to promote American principles and ideals. Membership in this organization is composed of city employees and others over thirty-five years of age who are native born citizens. Persons applying for membership must receive a favorable vote of the Board of Strategy and subscribe to an oath to support and defend the Constitution of the United States at all times.

Control and management of the organization is vested in the Board of Strategy which is composed of leading officials in Oklahoma City. As part of its work, the Board causes inspections and examinations to be made of public property, public utility properties, and all others in which the public may have an interest, in order to devise means of protection against destruction by fire, or otherwise.

Chief G. R. McAlpine, Chief of the Oklahoma City Fire Department, is the Field General of the Organization. He has charge of the field operations to be carried out by the following divisions: Fire extinguishing division, retired firemen of the department, civilians and city employees supplementing fire extinguishing division, intelligence division, technical division, food, shelter and transportation division, and public health division. The Fire Department Headquarters is the General Headquarters.

New Station for Stratford

At a cost of $35,000, a new fire station for Stratford, Conn., will be erected within a few months. The new station will replace the wooden structure now in use and built by the Town of Stratford over a half century ago.

The first floor of the new station will be allotted for three pieces of apparatus consisting of the town's new Mack quad-ladder truck, Mack 600-gallon pumper and a Chief's car. In the rear of the apparatus floor will also be a Chief's office, signal room, work room and public toilet. The first floor will be laid with cement.

On the second floor will be located the men's dormitory, recreation room, shower room and toilets. This floor will be of wood construction and the toilet room floor in tile. The exterior of the new station will be of hand-made brick face with a slate roof. To tie-in with Stratford's new Town Hall, across the street, the station will be of early Colonial architecture.

Thirteen men are on the roster of the Stratford Fire Department under command of Chief Allen D. Judson. They are Asst. Chief William Anthony, Captain Theodore Lockwood, Reginald Judson, Michael Macisak, William Ordner, William Bentley, John J. Heckler, Charles Rossell, Fred Donaldson, Richard Spada, Fred Wilcoxon, Elmer MacFarland and Kenneth Rood.

The new building was designed by C. Wellington Walker, architect, Bridgeport.

THOMAS F. MAGNER.

Gary Firemen Study in Spare Time

Although the Gary, Ind., Fire Department lacks a central drill school and drill tower which many cities use to give firemen practice, the men are not letting that handicap get the best of them. They have been studying courses conducted by the Indiana Fire Service Training School of Purdue University. The latest report tells of the firemen passing the first test on hydraulics with an average score of 96.4 per cent. Other subjects to be studied are: Forcible entry, minor extinguishment practice, salvage and overhaul, fire stream practice, fire fighting apparatus practice, Ventilation, rescue, first aid and fire fighting tactics.

School sessions are held daily except Saturdays, Sundays, and holidays, for two hours. The 105 men who passed the first test will receive diplomas from Purdue University bearing one seal for the first course. As each successive course is passed, an additional seal will be affixed to the diplomas.

Architect's Drawing of Building as It Will Appear When Completed

AUTOCAR
FIRE APPARATUS

Custom-building to meet local requirements is our Specialty. Let us bid to your exact specifications the next time you are asking for a Proposal, or write now for literature and photographs.

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THE AUTOCAR COMPANY
BOX FE, ARDMORE, PA.

FIREMAN'S NEW SAFETY COAT MEETS WITH GREAT APPROVAL

MANY CITIES ADOPT MIDWESTERN COAT

The new Midwestern Safety Coat recently introduced has met with instant success because Fire Chiefs, Firemen, and Safety Boards quickly saw its adoption meant a big decrease in bad accidents.

The picture tells much of the reason for the success of this Midwestern Coat. Firemen can be seen on dark nights—through fog, and smoke. Fewer men will be knocked off ladders and buildings by heavy hose streams . . . will be more easily found in fallen debris.

Midwestern has developed a new exclusive rubber cloth in which the white stripe is molded in. It is rubberized as a part of the material and is not sewed in or glued on.

Another great feature is the famous Midwestern Safety snap that can be instantly fastened or unfastened with one hand.

Note Chiefs: Write for Folder No. 9922 today.

Write for New 1940 *Catalog*

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MIDWESTERN MANUFACTURING CO.
Mackinaw, Illinois

Manufacturers of a complete line of firemen's quality clothing.

We Asked Fire Chiefs All Over the Country Why They Like

INDIAN FIRE PUMPS

And Here's What They Said:

FIRE DEPARTMENT
of
Harrison, Maine

D. B. Smith & Co.
Utica, New York
Gentlemen:

We use your INDIAN FIRE PUMPS the year 'round and are very well pleased with them. I have found we can use an INDIAN any place we would use a soda acid tank and to much better advantage, as we can have one pint or 5 gallons of water as needed. They are excellent for chimney and partition fires.

Very truly yours,
CLIFFORD D. DENISON, Chief

FIRE DEPARTMENT
of
Orange, Virginia

D. B. Smith & Company
Utica, N. Y.
Gentlemen:

We now have in service two of your INDIAN FIRE PUMPS and find them the best thing we have ever had for fighting roof, chimney, room and rubbish fires, of which we have had plenty this summer. We also find them very handy for cleaning down spot fires after a fire in a building. They save a lot of water damage and are much more convenient to handle than cleaning up with a hose.

Yours very truly,
E. H. ROUSE, Chief

A Complete Fire-Fighting Outfit in One Compact Unit • The Air-Conditioned Tank Holds 5 Gals. of Clear Water • The Pump Throws Powerful 50 Ft. Stream • Carries on Back or by Hand

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3 LARGE FIRES IN 5 DAYS KEEP PITTSBURGH FORCE BUSY

Multiple Alarm Fires, Starting from Unknown Causes, Damage Lumber Yard, School, and Furniture Storage Company

By William E. Patterson

THREE spectacular multiple alarm night fires, which occurred within a period of five days or ninety-six hours, gave Pittsburgh, Pa., firemen three good hot fire fighting jobs; all three of which called for five and six alarms and a number of special calls for extra apparatus, before they were brought under control.

The first fire of the series broke out shortly after one o'clock, Thursday morning August 8 in a large two-story frame building 44 x 148 feet, in the South Hills section of the city. It was owned and occupied by the West Liberty Lumber Company as a planing mill, office, garage and warehouse for paints, varnish and finished building materials of various kinds. All were completely destroyed before the firemen succeeded in stopping the progress of the flames.

The fire, which started from some cause unknown, had made great headway when first discovered by a watchman in a nearby warehouse. The first alarm was sent in by the watchman discovering the fire at 1:50 a.m. Five more alarms followed in rapid succession bringing thirteen engine companies and one truck company to the scene with a fire fighting force of sixty-two firemen in command of Battalion Chief John B. Callaghan, and Deputy Chief Charles Mc. Dermott, Acting Chief of Department in the absence of Chief Phelan on vacation.

Seeing that the lumber mill was doomed to complete destruction, when they arrived, firemen turned their attention to surrounding property. By hard, fast and efficient work with eleven pumper and one hydrant streams, the firemen succeeded in saving the large frame lumber storage shed containing a large amount of seasoned lumber, separated from the burning building by a driveway. The large lumber storage yard in the rear, the sawdust storage bins and other nearby buildings were showered with sparks and burning embers. Firemen were on duty for approximately fourteen hours before the last company returned to quarters. The loss on the burned building and contents was approximately $25,000.

The last fire companies returning from the lumber mill fire were only back in quarters about two hours and hardly had their lines changed and equipment ready for service when five alarms and two special calls sent the firemen rolling to the second major fire within twelve hours, a large brick school house located in the West End section of the city, and approximately only two miles west from the scene of the lumber mill fire.

Fire Which Damaged the Top Story and Roof of a Furniture Storage Company

Lumber Yard Fire Which Was the First in the Series of Multiple Alarm Blazes Occurring in Pittsburgh, Pa.

The fire, which started from some cause unknown, was discovered shortly before 6:00 p.m. in a store room of the building, a large three-story brick structure with a steep gabled slate roof, known as the Thaddeus Stevens Public School, a forty-seven year old landmark of the West End. The school was condemned several months ago by the Board of Education, and since last June was being used by a force of approximately 500 persons, employed on a WPA project.

Engine Company No. 10, on South Main Street, a half block distant from the school house, responded on a "Still Alarm" at 6:15 p.m., when notified by the watchman that the building was on fire. The "still" was quickly followed by five alarms which brought ten engine companies and two truck companies to the fire. The five alarms were followed by a special call at 6:35 p.m. for an aerial truck and a special at 7:08 p.m. for an extra turret wagon. In all, fifteen pieces of apparatus with a manual force of sixty-one firemen were under the command of Battalion Chief John I. Zollinger of the Fourth Battalion and Deputy Chief Charles Mc.-

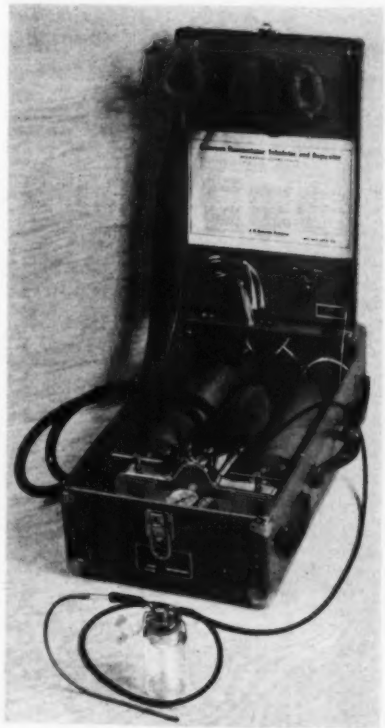
(*Continued on page* 528)

For

TOTAL DEFENSE

against

ASPHYXIAL DEATH



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EMERSON RESUSCITATOR

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A new development in mechanical resuscitation, inhalation, and aspiration.

Completely automatic and self-adjusting.

Small and compact.

Weighs only 60 lbs.

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2-yr. factory guarantee.

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CAMBRIDGE, MASS.

WAR FARE

Alarms and Discussions Clipped and Culled From the War News of the Day, of Interest to the Fire Service.

Roi B. Woolley

Speaking of Bombs—

Two men were hurt when a small and poorly constructed bomb exploded in a U Street branch Washington, D. C., P. O.

A metal bomb, thrown over the wall into Central Park, N. Y. C., exploded luckily without injuring anyone. . . .

A "bomb" made of alarm clock, two flashlight batteries, two glass vials containing yellow liquid, in a wooden cheese box, was discovered in locker of Bayonne Y.M.C.A. Fake? . . .

A "suitcase" bomb wrecked R.R. station at Calarasi, near Bucharest, killed many.

* * *

One for Winchell

Walt. Winchell could use this in his "Debunking the War News." Seems that the Germans ridiculed a British report that bombers had started a big fire early in September, at Cologne. Nothing to it, they said. But a few days later, a German airman, brought down and captured said he'd been ordered to go out and do a bit of "revenging" to "pay off the British" for the big fire they'd started at Cologne, when some bombed tanks released flaming oil that flowed down hill and destroyed a part of the town.

* * *

All Set in Old Kentucky

Shrill out, air raid sirens, John Hale and Palmer Trimble of Lovely, Ky., are ready. They've constructed what they think are "bomb-proofs" in isolated section of Kentucky mountain section. Hale, world war vet., built his safety-vault under huge rock cliff; Trimble built his of reinformed concrete in cellar deep under his store. *Come on, you war!*

* * *

The War Abroad

A two-hour fire wrecked building in Osaka, Japan, arsenal. . . . Old lace, stuck on windows is helping Londoners prevent damage in air raids. . . . The "stirrup pump" used by Britishers to fight incendiary fires is a single-tube "suction pump," like our old bicycle pumps, which derives its name from the handle, which is stirrup-shaped. . . . 42 Italians were killed, several hundreds injured in two explosions in Tiatenza, Italy) munitions works; three others killed, six hurt in explosion in percussion cap factory near Lake Como; five were killed in an explosion at Santandrea Machine Company plant; 38 killed, 178 injured in explosion in a Bologna "auxiliary establishment."

* * *

Of Course This Couldn't Be Sabotage!

Fire of "mysterious origin" caused $800,000 damage to Pemex refinery at Atzcapotzalco, Mexico, where "experiments" on high quality gasoline for Mex. government were being made. . . .

Ground plans of U. S. Gov't ordinance plant in Watertown, Mass., arsenal are "missing." . . .

"Mysterious burning" of Alabama's National Guard arsenal which destroyed estimated $1,500,000 in military equip-

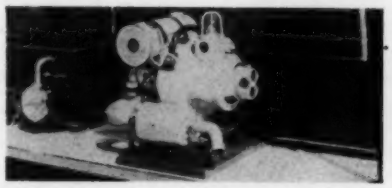
A Portable Hydrant of

BRILLIANT LIGHT

for Your Night Fires

SET IT UP ANYWHERE

With a Homelite Portable Gasoline-Engine-Driven Generator you have all the power you need for bright, steady flood-lighting *right where you need it.* Long cables are unnecessary. No manual attention. Automatically, it supplies 1800 watts with a constant 110 voltage regardless of load.



CARRY IT ON THE RUNNING BOARD

A Homelite can be carried on any truck. Small and compact, this rugged 82 pound unit fits easily on the running board—right where a man can get at it quickly and carry it to the spot you want your floodlight.

Send for New Bulletin

Showing how Homelite Generators are paying dividends to Fire Departments everywhere.

HOMELITE CORPORATION

810 Riverdale Avenue, Port Chester, N. Y.

Firemen Battle a Hot Fire in This Once Condemned Public School

3 Large Fires in 5 Days

(*Continued from page 526*)

Dermott, Acting Chief of Department.

By the time the first alarm companies arrived on the scene, the fire had made great headway and quickly spread up the open stair case to the third floor, a large loft, and the roof. By hard work, the firemen with fifteen pumper streams, two turret streams, and a water tower stream from the new 100-foot Seagrave aerial truck, kept the fire practically confined to the top floor and the roof which were practically destroyed. Only four minor casualties occurred during the progress of the fire, four firemen receiving minor cuts and burns from falling slate, etc. The loss on the building and contents was approximately $20,000 fully covered by an insurance fund carried by the Central Board of Education. The burned building is to be torn down at an early date.

The third fire of the series broke out shortly before one o'clock on Monday morning, August 12 in a seven-story brick storage warehouse, located in the Bloomfield Section of the city, and occupied by the Shadyside Transfer and Storage Company. Fire was discovered by a young man living next door to the burning building who aroused his parents and then turned in the first alarm at 12:47 a.m.

Force Entrance to Building

When the first alarm fire companies arrived on the scene, they found all doors and windows closed. After forcing an entrance, they found the fire to be burning in a small room on the first floor adjoining the elevator shaft, from where it quickly swept up the shaft to the seventh floor which was filled with furniture. This and the roof, were completely burned out. The second, third, fourth, fifth and sixth floors were practically untouched by the flames; fire doors confined the fire to the elevator shaft, the seventh floor and the roof. Six alarms and a special call brought thirteen engine companies, four truck companies and one squad company to the fire, with a force of seventy-one firemen and twenty-one pieces of apparatus in Command of Acting Battalion Chief Bernard J. Cavanaugh of the Second Battalion, Battalion Chief David A. Wilson of the Third Battalion and Acting Chief of Department Charles J. Mc. Dermott. With twelve pumper streams, the firemen fought the fire from the street, from the roofs of surrounding buildings and from the inside of the burning building, where they dragged their lines up the stairway to the top floor, putting the fire out as they made their way up the stairs in stifling choking smoke. All of the seven floors contained furniture and household goods which were badly damaged by the dense smoke, and the flood of water which poured through all the floors to the basement. Squad Company No. 1, which answered the special call from the downtown business district, spread twenty salvage covers at the fire. A few firemen received minor cuts from falling glass. The loss on the building from fire, smoke and water will be approximately $20,000.

Need for New Ladders Shown at Fire

Eleven members of the York, Pa., Fire department were injured in a nineteen hour battle with a $200,000 blaze they fought August 9 and 10 in the heart of York's business district. The blaze resulted, however, in an effort being made by Safety Director Curtis C. Schaberg to have the twenty-five-year-old aerial truck replaced with a new one. He introduced a resolution to city council while firemen were still working on the blaze.

A Group at the I.A.F.C. Convention

(L. to r.) Mrs. W. J. Scott, Kearney; Mrs. Michael T. Keena, Hartford; Mrs. F. J. Fricke, Jr., Elizabeth; Mrs. Chas. J. Wilderotter, Newark; and Mrs. J. Keegan, Newark, N. J.

Another Fire Reported

Box 5, a block from Continental Square, was sounded at 10:48 p.m. and five of the eight York companies responded with a service truck, three 1,000-gallon and one 750-gallon pumpers and five combination wagons. Because he had enough men and second alarm in that area would have brought out all city equipment, Chief L. Ellis Wagner telephoned for the Boyd aerial, the auxiliary truck with a lighting system, and two more companies with a 1,000-gallon and a 750-gallon pumpers and two combinations. Another pump, not kept in active service, was called and connected with the aerial to be used as a last resort.

Councilman Schaberg, a former Chief of the York volunteers, said he "couldn't keep looking, it made me feel so sick," when firemen manned the aerial truck to get to the roof of the burning building. The old ladder, with loose and missing rungs, bent like a springboard under their weight. When council convened later that morning he asked in an ordinance for a new 100-foot metal ladder, and the ordinance was given first passage. All previous attempts to have council buy a new aerial had failed.

None of the volunteers was seriously injured, and all were discharged after treatment at the York hospital or by the two physicians stationed near the fire with an ambulance and inhalators. A number were overcome by smoke and others were treated for gas poisoning, while many had lacerations.

The blaze started in the center of the basement and burned up through to the roof, three stories above. Firemen kept it from spreading to the front or back of the building or the stores on either side. They were hampered in their efforts by the two small entrances in the front and two more in back, only means of entering the building, and by a two-inch gas pipe feeding the flames in the basement. Before dawn a gas company crew went through the sidewalk with pneumatic drills and plugged the pipe.

Department Store Damaged

Even worse hit than the building on fire was Wiest's Department store, one of the city's largest. Only a "party" wall separated it from the McCrory Building. Four feet of water on the basement floor and dense smoke throughout the building resulted in $100,000 in smoke and water damage, the manager said while insurance adjusters were viewing the loss.

The McCrory building was valued by its owner at over $60,000, McCrory stock at $30,000; a portrait photographer's equipment at $10,000, and damage to other offices in that building and two shops on the other side at about $20,000 more. The photographer lost thousands of negatives.

(*Continued on page 529*)

ment and the $42,500 arsenal "is being investigated." Front and rear of building were afire at the same time—unconnected blazes. . . .

Fire attributed to "carelessness" did $5,000 damage to wharf in Boston, forcing temporary removal of German tanker which was nearby. . . .

Immigration offices on Angel Island, San Francisco Bay, destroyed by fire. "Short circuit" blamed. . . .

Three men were killed when press mill of King Powder Company, near Cinnati, exploded. Firm makes black blasting powder for coal mines. . . .

Formulas and samples used in experiments for U. S. Army designed to synthesize low grade oils with properties of high grade lubricants were supposedly "stolen" in Boston. . . .

Million ponds of tea went up in smoke, when Thames-side warehouse burned in London early in August. . . .

Explosion at DuPont Plant at Gibbstown (N. J.) killed four men, rocked area of 25 miles. U. S. Agents investigating.

Need for New Ladders

(*Continued from page* 528)

Several times, the department store elevator shaft was ablaze but firemen quickly extinguished it with little damage and flames never entered the building. The store ran half-page ads in the York papers thanking the firemen and gave Chief Wagner a $100 check, as did the McCrory company, to be used by the department in any way it chose.

The York Water Company said 2,597,750 gallons of water were used on the blaze.

RAY K. SCHLEETER.

N. E. Chiefs to Meet With I. A. F. C.

At a recent meeting of the Directors of the New England Association of Fire Chiefs, it was voted to hold the 1941 Convention at Boston on the two days preceding the annual conference of the International Association of Fire Chiefs.

Chief Selden R. Allen, of Brookline, was appointed Director from New England to take the place of Chief Daniel B. Tierney, of Arlington, who is now Secretary-Treasurer of the International Association.

N. B. F. U. Opposes Chiefless Department

A short while ago, Chief William J. Dooling of the Malden, Mass., Fire Department was forced out of the fire department by a city administration that held that the position of Fire Chief was unnecessary.

At the present moment, the matter is in the State Court to determine whether or not the Tenure Act was invalidated by the action of the city administration.

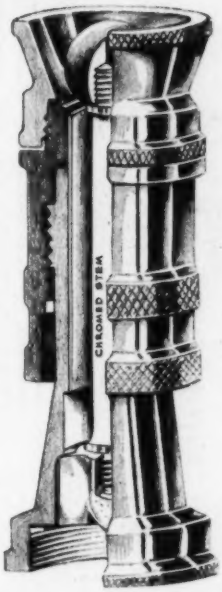
Recently, the National Board of Fire Underwriters conducted an engineering survey of the City of Malden, and in their recommendations they urged that the office of Fire Chief be re-established.

In the report, the National Board stated: "The recent action of abolishing the position of Chief of the fire department is a serious retrogression which cannot do otherwise than lessen discipline and the morale of the department, and reduce its effectiveness."

THE IMPROVED

WOOSTER-DAY

A NEW FIRE-MIST NOZZLE DESIGNED BY OLD HEADS



Improvements, yes, but no trick "gadgets" or frailties. It is the result of a combination of ideas, practical experience and mechanical ability on the part of many "old heads" in the fire fighting field.

The WOOSTER-DAY FIRE-MIST creates a veritable blanket of water mist which envelopes the blaze, is converted into steam and quickly smothers the most stubborn fire.

Make this nozzle part of your practical modern fire fighting equipment. Write for Bulletin 10-841.

It is no longer necessary to pay a premium price for an adjustable mist-producing nozzle.

This nozzle cannot clog.

No delicate or finely adjusted parts.

Increased fire fighting efficiency.

Reduced water losses.

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We Specialize in

MADE-TO-ORDER FIREMEN UNIFORMS

Leading manufacturers of uniforms for the New York City fire department. Samples and prices gladly sent upon request.

MERSON UNIFORM CO.

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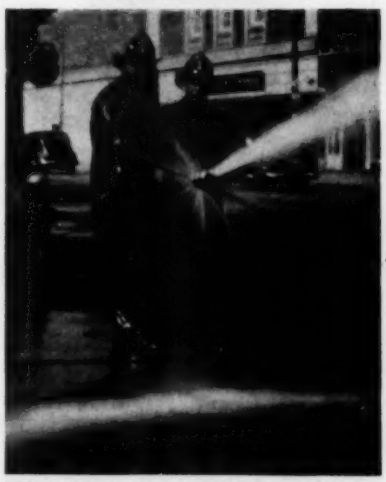
LUM PRO-TEC-TIVE FIRE NOZZLE



THROWS a circular curtain of water in front of fireman operating nozzle, yet curtain in no way interferes with stream of water. Affords protection from intense heat, sparks, flame, etc., and enables fireman to get closer to fire. Ideal for fighting lumber yard or oil fires.

Made of light-weight aluminum, chromium plated, with durable horse hide handles. Weighs only 10¾ lbs.

Write for full particulars and special "trial offer."

GEO. F. LUM, 8903 Mandale, Detroit, Mich.

Cut Fire Losses with
MASTER-LIGHTS!

Type WS

Now, let your men work **effectively** in those vital first 5 minutes at the fire. Equip them with MASTER-LIGHTS! They'll **work faster—be more efficient—cut fire losses.** For MASTER-LIGHTS let your men SEE—even in blinding smoke! Their HIGH POWER and CONVENIENCE help your men find fires while they're still controllable.

The WS Will Help You!

MASTER-LIGHT WS is one of the MASTER-LIGHTS you need. Perfect balance—weighs only 12 pounds, complete with rechargeable battery—250,000 c.p. beam with **full mile range!** Powerful, convenient WS helps your men **work faster.** And they're **safer** with the WS to point out danger spots to them!

Try MASTER-LIGHTS *Free!*

The WS is only one of many MASTER-LIGHTS that will help you. Write now for Folder. Select lights you want, then send for your MASTER-LIGHTS on 30 days FREE TRIAL! Prove MASTER-LIGHTS' value at our expense—write NOW!

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200 Sidney Street, Cambridge, Mass.

COVER'S NOD and SHAKE SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and Saves the Lungs.

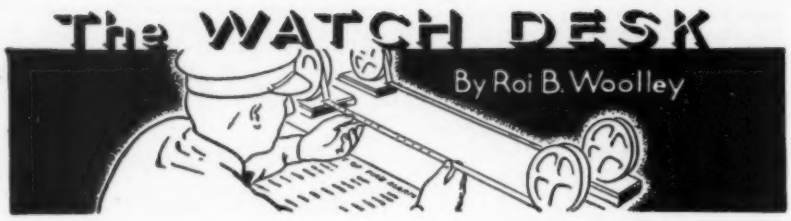
WHY GET SICK?

Price $48 per Dozen

Upon receipt of $4.00 one will be forwarded as a sample postpaid.

H. S. COVER

Station A, South Bend, Ind.



Our inquiring reporter overhauls the firemanic news of the day

Was He Burned Up!

Edward Wood, 20, of Newark (N. J.) lost $40 when the side of his left trousers pocket caught fire. He'd fallen asleep in his car, a lighted cigarette in his hand and was awakened by the sound of arriving fire engines. A passerby had seen smoke rising from his car and shot in an alarm. Mr. Wood was treated by a physician for first and second degree burns on his leg, but nothing could be done to sooth his injured feelings at having kept his cash in the wrong pocket!

The "Brotherly" Brothers

The "good neighbor" policy is in full force in Calexico (Cal.) the border city between the U.S.A. and Mexico. When a fire breaks out in Calexico or in adjoining Mexicali, across the international border, the Brothers of both fire departments are Johnny-at-the-rat-hole with their "boots and nozzles". Now and then the Americans beat the Mexicans to their own fire, particularly when the blaze is located in downtown Mexicali, since Calexico's fire house is within 100 feet of the international border and Mexicali's business district, while the Mexican department is more than a mile away.

The Luck of the Devil

It isn't often that a truck driver piloting 8,000 pounds of dynamite can crash into a utility pole and live to tell the tale. Glenn Helms, South Connellsville (Pa.) is the exception. His dynamite-laden truck skidded, bounded across a ditch, through a picket fence, bowling over a utility pole, just missed several trees and finally stopped a few feet from an unoccupied house—without Helms being scratched. **"Dynamite won't explode unless under pressure"** sez Helms **"and mine wasn't under pressure."** OH YEAH!

Duke a "Visiting Fireman"

The Duke of Sutherland was an unofficial member of the Juneau (Alaska) fire department, recently. While McKinnon, aid to Gov. John Troy was showing the Duke about the town, the fire alarm sounded. McKinnon is also Asst. Fire Chief and promptly tried to excuse himself to the Duke, but royalty insisted on answering the alarm, too, and all hands responded. Our correspondent sayeth not whether the royal robes got a wetting.

Now This Is More Like It!

Where were WE on March 28th last! We shoulda been in Media, Pa., ferninst Philadelphia, where 450 girls—all, or most of 'em, pajama clad, formed a bucket brigade to help fight a fire that destroyed a work building of the Sleighton Farms School. Normally guarded in a series of cottage dormitories, the gals swarmed over the lawn in night clothes when fire was discovered. And where were all those Philly contribs! *One of 'em mighta called us!*

Who Wrote the Pamphlet on Phantom Fire Chief?

Borough Council of Roseland, N. J., has been sleuthing to determine authorship of pamphlet called *"The Mystery of the Phantom Fire Chief,"* which charged that Chief Chester Greenerd was never 'round when there was a fire. Twenty-four firemen—the entire department—were charged with authorship, but most of 'em rendered denials. With department under suspension, Brothers from Essex Falls are protecting Roseland.

Is Our Face Red Department

Several of the Contributors sent this one: In Three Rivers, Mich., Fire Chief Joe Boll paid a $3 fine in the court of J. L. Van Selous, Justice of the Peace, because he was pinched for "speeding 55 miles an hour in response to a false alarm of fire." Motorcop Gerald Bowers gets credit for the arrest. Ho hum! You write your own caption!

When fire destroyed farm home near Rochester, N. Y., woman, 96, and nephew, 60, died. House destroyed. Cause unknown.

Unusual operating room accident, explosion of cycloprophane gas, as it was being administered to a patient in Sloane Hospital for Women, unit of Columbia-Presbyterian Hospital, New York City, for minor operation, caused ruptures of windpipe and bronchial tubes of patient, Mrs. Duncan Dunbar Stephen, Jr., of Dobbs Ferry, N. Y. The anesthetic, in rubber pressure bag, exploded, breaking the glass cover of the dial on the anesthetic unit. Doctors, not believing patient had been injured, continued with operation, finished in ten minutes. Hour and a half later patient showed signs of shock and attaches administered adrenalin, oxygen and artificial respiration but Mrs. Sutphen failed to rally. There was no fire.

Mrs Margaret Lyons, 40, Toms River, N. J., awakened by odor of smoke, found husband on kitchen floor, unconscious, his clothes ablaze. She dragged him outside, collapsed, then, later, ran quarter of a mile to nearest neighbor, returning with help to find house destroyed, husband dead. Cause: kitchen stove.

Introduction to a Fire

(*Continued from page 503*)

tacked his morning mail. To his surprise he noticed on the corner of his desk an official report marked Fire Department. Reaching for the thick sheaf of papers he opened to the first page.

"I have the honor to present my twentieth report as Chief of the Custer City Fire Department."

Skipping the many pages of closely-typed statistics, he came to the heading "Recommendations."

"I again earnestly request that the seriousness of the present situation be realized, and that I be furnished funds to purchase a second aerial ladder truck, that I be authorized to add ten privates to my force, and that a survey of all old stations be made at an early opportunity, with appropriate action to be taken on the same."

Mayor Jones' gaze momentarily lifted to the high hill, so easily in view on which many windows in their storied setting reflected the morning light. "Yes, I was right. It's a mighty fine department." On the page marked "Recommendations" in Chief Ormond's report appeared the freshly-written word "approved."

Austin Jones reached for his blotter.

Company Celebrates 150th Anniversary

A week long celebration was held from September 1 to 7 by the Laurel Steam Fire Engine company of York, Pa., in observance of the 150th anniversary of its founding. A memorial service, grand ball and parade were the celebration features.

The observance began Sunday, September 1, with a memorial service in Trinity Reformed church, when the Rev. Dr. Allen S. Meck, department chaplain, delivered a sermon. On Tuesday evening the other seven companies of the York volunteer department were entertained. Wednesday evening volunteer companies from around York were guests. Laurel night was observed Thursday, with a party for all Laurel members and York department officers. On Friday, the grand ball was held, and Saturday morning a parade. An ox-roast in the afternoon, ended the affair.

Forty-two paid and volunteer companies from York county, throughout Pennsylvania, and from New York and Virginia, received invitations. Many had delegations present. Several of the companies invited helped celebrate the Laurel's hundredth anniversary in 1890. Since then, in several cases, the volunteer departments had become paid. Some of the visitors learned for the first time, the inside operations of a volunteer department, where only the Chief and drivers are paid.

In charge of the celebration was Assistant Chief Millar S. Spangler, long a member of the Laurel company.

RAY K. SCHLEETER.

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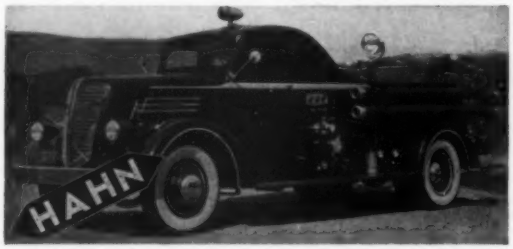

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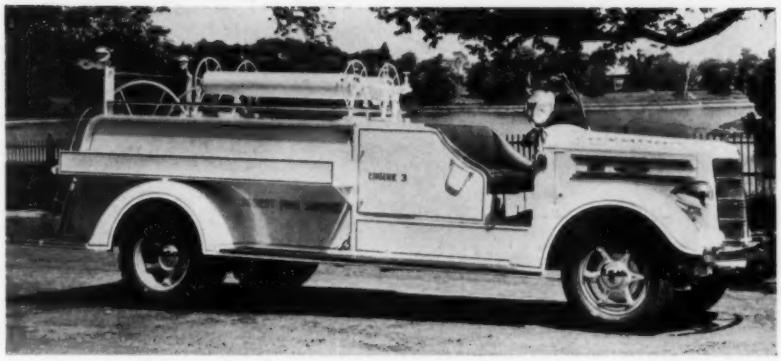
ESTABLISHED 1907
MINNEAPOLIS, MINN.

Convention Dates

Oct. 14-17 — INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Meeting at Jacksonville, Fla. General Chairman, George Allen, Supt. of Fire Alarms, Jacksonville.
Oct. 15-17—ILLINOIS FIREMEN'S ASSOCIATION. Annual Convention, Murphysboro, Ill. Secretary, R. W. Alsip, Champaign, Ill.
Oct. 15-17—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual Meeting, Omaha, Neb. Secretary, Louis A. Novak, Norfolk, Neb.
Oct. 23—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly Meeting, fire house, Ridgefield, Conn. Secretary, John H. Moehring, Belltown, Conn.
Nov. 20—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN Monthly Meeting, fire house, New Canaan, Conn. Secretary, John H. Moehring, Belltown, Conn.
Dec. 18—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Monthly Meeting, fire house, Springdale, Conn. Secretary, John H. Moehring, Belltown, Conn.



New Hose and Booster Truck for Forest Service

The Town of Foxboro, Mass., recently purchased a new Mack Type 40 hose and booster fire truck, which was designed primarily for forest fire service. This machine carries a 300-gallon booster tank with a 200-gallon rotary pump, reels for 500 feet of ¾-inch hose, and a large reel for 1,200 feet of 1½-inch hose. Shelves on each side of the unit are provided for Indian pump cans and a special compartment behind the driver's seat accommodates a portable fire pump.

Manufacturers' Announcements

Manhattan Rubber Buys Property

The development of new rubber products, and the wider use of rubber goods has necessitated additional manufacturing and storage space for the Manhattan Rubber Manufacturing Division, Raybestos-Manhattan, Inc., Passaic, N. J. To provide this additional space, Raybestos has purchased the Brighton Mills plant in Passaic. The building includes approximately five and one-half acres on which are buildings with 240,000 square feet of floor space.

Kerotest Emergency Squad Wagon

Following suggestions of Fire Chiefs throughout the country, the Kerotest Manufacturing Company, 2528 Liberty Avenue, Pittsburgh, Pa., developed and equipped a new truck known as the Kerotest Emergency Squad Wagon. The equipment includes a built-in air compressor, 110-gallon booster tank, an 1,850-watt electric generating plant, 85,000 candle power Ultralite, aluminum ladders, a portable power saw, hydraulic jacks, portable steel cutting outfit, complete hospitalization outfit and about 275 other tools and pieces of equipment for emergency service. Accessory equipment for river work, such as a fourteen-foot steel boat with trailer, life preservers, diving helmets, and underwater lights, is available.

Rubber Goods Catalogue

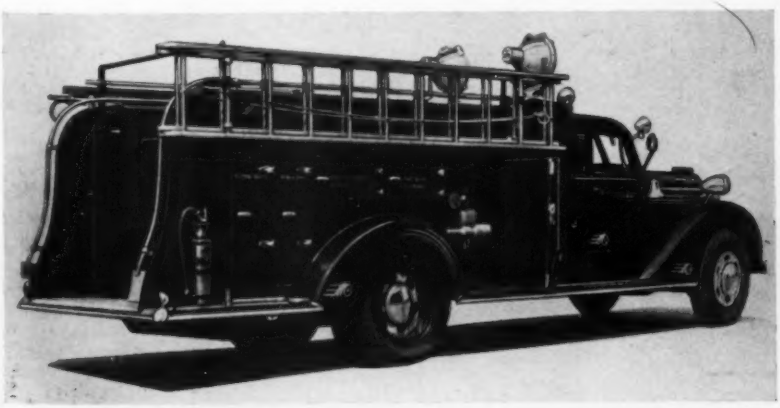
The Goodall Rubber Company, Philadelphia, Pa., has released a catalogue covering the various Goodall Mechanical Rubber products. Tables are included giving important characteristics of the products. Technical data are placed in the final pages of the catalogue to aid in determining which product will satisfy requirements.

Lum Protective Fire Nozzle

A protective fire nozzle of the water shield type which has been invented by George F. Lum, of Detroit, Mich., will be placed on the market very shortly.

This nozzle is intended to protect firemen from smoke and flame, by providing a water curtain between them and the fire. At the same time, this curtain does not interfere with the main stream discharged from the tip of the nozzle.

Through the use of movable discs, the water curtain may be made to play back on the firemen using the nozzle thereby protecting them from the intense heat of a fire. This advantage enables firemen to work close to a fire, efficiently utilizing the main stream from the nozzle. It is claimed to protect firemen working on a ladder at the window of a smoke-filled building from sudden bursts of flames.



The Emergency Squad Wagon Showing Tool Compartments and Some of the Equipment

California Cuts July 4 Losses

"A step in the right direction, but not a big enough one!" That is the conclusion drawn upon California's new statewide law controlling the use of dangerous fireworks as the personal and property damage cost of July 4, 1940, is totaled.

For the first time in the Golden State's history, the use of fireworks was regulated this year by a law enacted by the state legislature. But, as had been predicted by prevention officials, a single amendment to an otherwise "safe and sane" bill resulted in the injury of 160 children in Los Angeles alone. The amendment passed allowed the sale of "small" firecrackers, although the bill itself outlawed most dangerous fireworks, such as Roman candles, sky rockets, torpedoes, chasers, snake-nests, cherry bombs, etc.

The result of this partial regulation clearly shows the facts. Fires, usually caused by the banned articles, were decreased to a great extent, but receiving hospital attendants and doctors treated their usual number of Independence Day casualties. Torn fingers, burned faces, eye injuries and serious cuts from blown-up cans and bottles were the common injuries of children between the ages of seven to twelve years.

The majority of these personal accidents were caused by the so-called "safe" firecrackers. The law defines these as firecrackers under two inches in length, ⅛-inch in diameter and containing twelve grains of explosives.

In most of the large cities, including Los Angeles and San Francisco, all firecrackers are illegal. But neighboring vicinities put up stands just outside the city limits which sell the articles, and they are "bootlegged" into the city, where apprehension of all lawbreakers is physically impossible.

Taking the place of the home-firework displays were supervised public shows, of which Los Angeles alone had ten, the largest of which, sponsored by the American Legion, drew 70,000 to the Memorial Coliseum.

That the trend thorughout the entire United States is toward a safe and sane Fourth is shown in that nine states:

New York, Pennsylvania, Michigan, New Jersey, Iowa, Delaware, Indiana, Utah and West Virginia have abolished all but supervised public displays. California, Illinois and Wisconsin have laws partially governing the use of fireworks. Before the enactment of these laws in 1939, California, New York and Pennsylvania led the nation in Fourth of July injuries.

McPherson Has Modern Fire Department

By H. G. Lindgren

The personnel of the McPherson, Kans., Fire Department consists of a Chief, an Assistant Chief, a Captain, and two Lieutenants. These are the paid members of the department and they work in two shifts of twenty-four hours each. The Chief works during the day. Two members stay at the station at night and respond to alarms when on duty. The twelve volunteer firemen respond to all alarms, being paid for those to which they respond. There are two paid drills per month for the entire department. The volunteers are paid for the drills that they attend.

Chief H. G. Lindgren

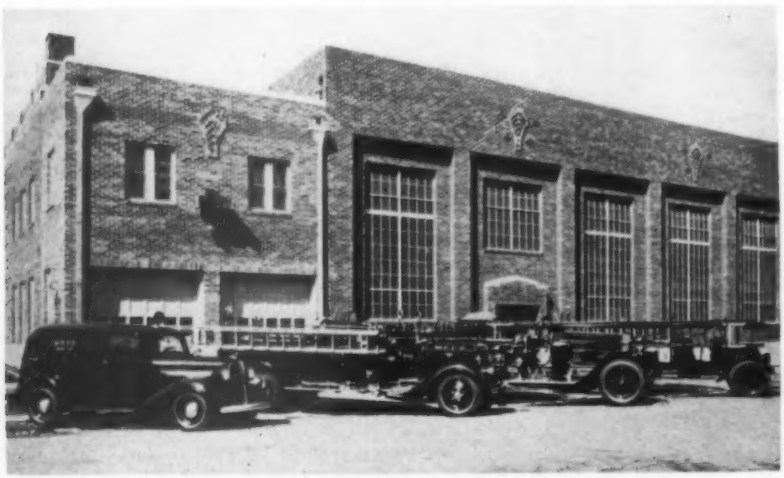
The equipment consists of a Ford-Seagrave pumping engine, 500 gpm, with a 150-gallon booster tank; an American-LaFrance pumping engine, 750 gpm, with a 135-gallon booster tank; an International hose and ladder truck carrying a 1,250-watt light plant and four flood lights; and a combination squad car and Chief's car which was recently put in service.

The inside of the squad car was designed by the paid members of the department. It carries a complement of equipment for salvage, mopping up, and rescue work. This combination truck serves as a Chief's car and answers alarms in the high value district, neighborhood business district, and residential district, and will answer rescue and emergency calls when at the station.

In the past five years that the department has been using fog nozzles, it has had very good results with them on all types of fires, with the exception of electrical fires. These nozzles are easy to handle, give the men protection from the heat of the fire, and they cut down the loss from water damage on the average fire. The department carries two lines, 100 feet each, of 1½-inch hose with fog nozzles and a 2½ × 1½ × 1½-inch gated wye in a trough on the side of each pumper.

For fires that are beyond the booster stage, the department runs a 2½-inch line to the fire and places the gated wye on the line. Then the 1½-inch lines can be attached to one side of the wye which leaves the other side for a 2½-inch line, in case the 1½-inch lines are not enough. As an alternative, the men can put the two 1½-inch lines from the second pumper on the first line, 2½-inch, which would give us four 1½-inch lines fed by the one line of hose. This has been very satisfactory.

Personnel of the McPherson, Kans., Fire Department



Apparatus of the McPherson Department

Saginaw Wins Fire Trophy

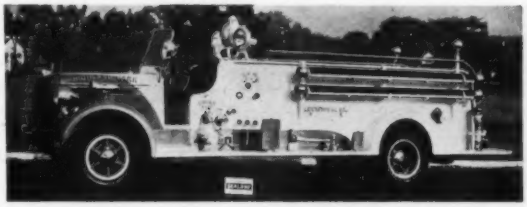
In recognition of Saginaw's low fire loss, its fire prevention activities, and departmental improvements, the Eastern Michigan Fire Chief's Association presented Saginaw's Chief Bender with the Paxton Mendelssohn fire prevention trophy. The final decision of the award was based on this city's low per capita fire loss of ninety cents. Last year the trophy was won by Highland Park fire department and by Lansing the year previous. It has been pointed out that Saginaw has a chance of retaining the trophy in view of its current fire loss of $52,000.

Firemen Make Odd Rescue

Members of the rescue squad, Boston, Mass., were too big to make a quick rescue of Martin Smith, who had been chosen, because of his size, to paint the inside of a chemical tank. He was nearly asphyxiated because firemen were too big to enter the tank to aid him when he collapsed. The rescue squad pumped air into the tank for more than an hour before Smith was revived sufficiently to tie a rope around himself to be hauled to the open air.

SEALAND STANDARD PUMPER

on a chassis designed for fire service



500-gallon pump. Hercules 118 h. p. motor. A standard unit at a standard price.

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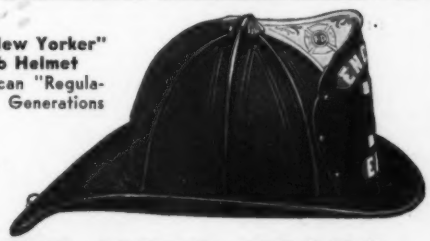

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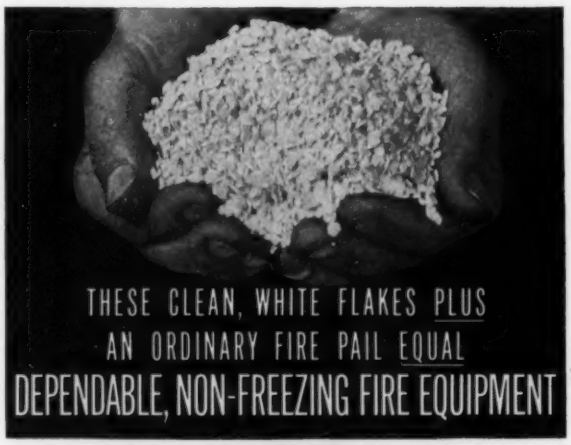
Cairns "Drop Brim" Helmet
For those who prefer the smaller type.



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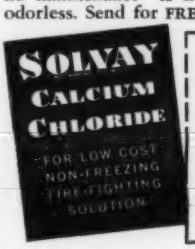

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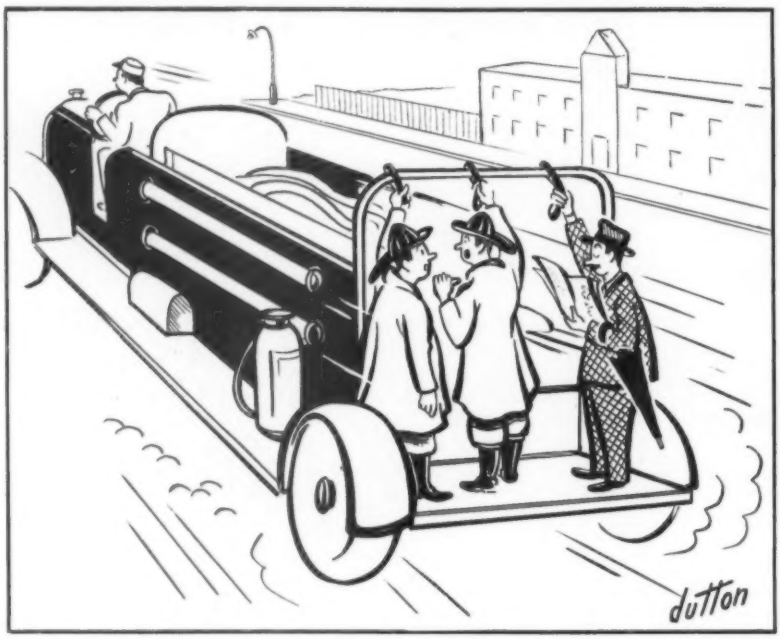

"Don't ask me, I never saw him before!"

THE EVIDENCE

In journalism one comes across odd stories. For instance this sad note was sent in to a western newspaper from one of the rural correspondents:

"A valuable team of mules belonging to Earl Price was found dead in his barn on Tuesday morning. Mr. Price knew the mules were dead because they wouldn't eat."

This sign is said to have appeared in the window of a building being remodeled and occupied by a barber shop: "During alterations, all patrons will be shaved in the rear."

AND HOLD YOUR EARS

On returning from a false alarm, one of the rookies approached Speed, the driver, and said, "Don't drive so fast around the corners. It frightens me."

To this Speed advised, "Do what I do, shut your eyes when we come to a corner.

HOW WAS HE TO KNOW

She: "I suppose you've been on a boat so long that you're accustomed to sea legs."

Member of Fireboat John Gaffrey: "Honest lady, I wasn't even looking."

I GET THAT OLD FEELING

Two of Smithtown's firemen walking along, passed one of the town's most charming and alluring beauties.

"I feel like taking her out again," whispered one.

"Have you had her out?" asked the other.

"No, but once before I felt like it."

Somebody told me that the doctors advise eating an apple each time instead of taking a drink. Who ever heard of eating twenty-five apples a day?

HEARD IN A DARK CORNER

"I take whiskey for my insomnia."

"Does that make you sleep?"

"No. It makes me satisfied to stay awake."

Susie's idea of an optimist is the man who took the marriage vows at the ripe old age of eighty-seven and started househunting for a new place close to a school.

ELECTRICALLY SPEAKING

The department electrician was haled into court. He was brought before the Magistrate of the local court who asked him, "What is your name, occupation and what are you charged with?"

To which the prisoner replied, "My name is Sparks, I am an electrician, and I am charged with battery."

The Magistrate on recovering his speech ordered, "Officer, put him in a dry cell."

"Oh! I know now. We were going to figure the capacity of them cylindrical tanks!"

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34 years service in the fire field

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Prompt service Quality products

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Send for illustrated folder on the New Elkhart Mystery Nozzle.

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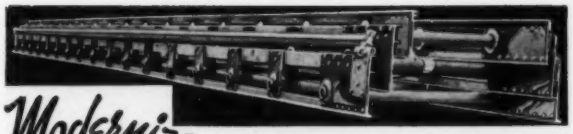

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Manufactured by
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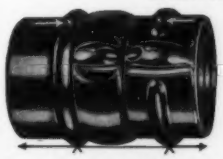
"Territories Available"

This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

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From small volunteer units to many of the nation's largest municipal fire-control systems, Republic Fire Hose is depended upon for reliable performance and the ability to withstand every type of abuse. Rigid manufacturing control and laboratory testing provide a hose construction that justifies this confidence. Moreover, Republic Fire Hose offers an additional feature that can always be counted on . . . a safeguard against hose failure due to the destructive action of mildew and rot. This is the exclusive Provar Process—permanent treatment which neither affects the physical properties of the hose nor washes out. Republic Rubber Division of Lee Rubber and Tire Corporation, Youngstown, Ohio.

REPUBLIC RUBBER

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OCTOBER, 1940

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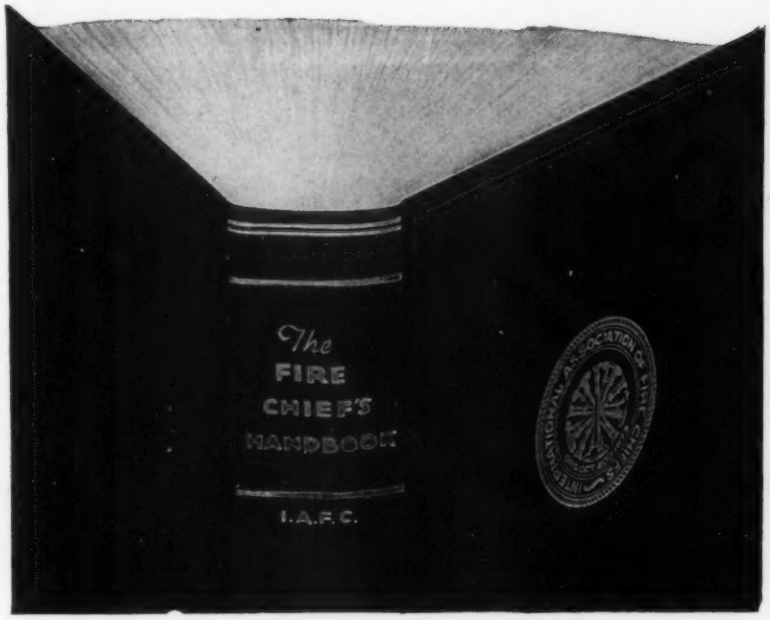

The Greatest Book On Fire Fighting Ever Published

The

FIRE CHIEF'S HANDBOOK

BY FRED SHEPPERD

THERE have been many books on various phases of fire fighting, but never has there been anything so complete and authoritative as this. From newest call man to veteran chiefs, they all agree it's the greatest book they've ever owned on fire fighting. It's a veritable gold mine of information, truly called the bible of the fire fighting profession.

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